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Natural Resources of

NEVADA

Prepared by the - United States Department of the Interior - Stewart L. Udall , Secretary

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(Front cover) Throughout Nevada, rugged mountain ranges rise alongside flat valleys such as this near Ursine.

Hoover Dam (above), by regulating the Colorado River, provides flood protection, recreational opportunities, water storage, and power to Nevada and much of the West.

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Natural Resources of Nevada

"The Silver State"

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The purpose of this booklet is to bring a new awareness on the part of the American people of our rich natural resource heritage, its history, its present, and its future. To know our land is to love it and cherish it and protect it from the ravages both of nature and man.

Stewart L Udall

Secretary of the Interior.

Contents

Page

Introduction and History 6
Physical Characteristics 12
Fish and Wildlife 16
Water and Power 21
Land and Forests 26
Mineral Resources 31
Indians and Their Resources 34
Outdoor Recreation 38
Programs of Natural Resource Agencies . . 47
    U.S. Army Corps of Engineers 48
    Forest Service 49
    Fish and Wildlife Service 51
    Geological Survey 52
    Bureau of Mines 53
    Office of Minerals Exploration 55
    Bureau of Indian Affairs 55
    Bureau of Land Management 56
    Bureau of Reclamation 58
    Bureau of Outdoor Recreation 60
    National Park Service 61
The Future 63

BUFFALO BILL'S
TATE
FILM
CAMERAS
SUNDRIES
BUDWE
BAR
CAFE

LACE CLOTHIN
TRADING PO
FREGGER'S PIONEER STORE

Nevada blazed to life in boomtowns now silent and shadowed.

Introduction and History

Nevada's mountains challenged early pathfinders. Today, they offer scenic delights which inspire visitors.

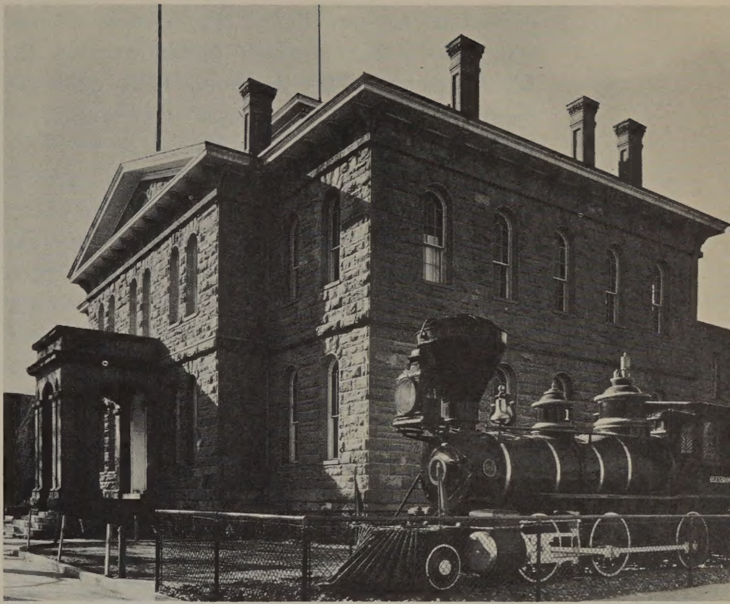
Well into the 19th century, Nevada was an unknown land. The last part of the United States to be explored was the Great Basin; the last area within this basin to be penetrated by the white man was Nevada. But today, thousands of visitors seek Nevada each year, and the routes to the State are numerous and well-traveled. To know Nevada is to know a land of vast beauty covering more than a hundred thousand square miles of brilliantly colored terrain rising in chain after chain of mountains. Its summits were hailed by Ralph Waldo Emerson in 1863, a year before Nevada became a State:

> "Nevada! Coin thy golden crags,
> With Freedom's image and name."

Nevada's snowy peaks on its western border inspired its name—Spanish for "snow-clad." But Nevada is a land of physical opposites. From the mountains one can see Death Valley with its tawny sands, splashes of floral color, and desert silence. The desert blooms with flame-colored flowers, while in the northern part of the State grows the sagebrush which gives Nevada one of its nicknames—"The Sagebrush State."

Through the Great American Desert, out of which Nevada was carved, a stream of trappers, explorers, and pathfinders wandered before any permanent settlement was made. The Spanish, in search of silver and gold, explored the southwestern part of the United States as early as 1540, but there is no proof that a single one of them entered the boundaries of Nevada until as late as 1774, and then they were intent merely on finding a way across the land. Ignoring the land beneath their feet, the Spanish failed to discover the wealth that was to make Nevada known later as the "Silver State."

The expeditions of Spanish Captain Bautista de Anza and Father Francisco Tomas Garces, who may have crossed the southern tip of Nevada, sought a route from northern Mexico to upper California. Another expedition by two Franciscan friars, Dominguez and Escalante, zigzagged from Sante Fe into what is now southern Utah. Impassable mountains turned them back before they reached Nevada, but the expedition did produce a map that was to help draw attention to the territory by leading later explorers to assume that a stream crossed the Great Basin, cutting its way through the Sierra Nevada. The expedition also opened



Ruins of Fort Churchill, founded to guard the overland trail, mark a settlers' route in Nevada. The railroad ended the terrors of the desert crossing. An early locomotive (right) stands preserved today at the State Museum in Carson City.

a trade route between Sante Fe merchants and the Utah Indians which later extended to the Indians in southeastern Nevada.

For nearly half a century after the Dominguez and Escalante expedition, no one attempted to enter the forbidding region wedged between California, Arizona, and Utah. The power of the Spaniards declined before they explored this "unknown land" but Spanish influence is felt in Nevada today through such place names as Las Vegas, Esmeralda, and Amargosa.

Fur Trading and Exploration

The real exploration of Nevada did not begin until the late 1820's when the fur trade reached its peak and trappers and traders searched the valleys of the West for beaver streams. On such a search, Jedediah Strong Smith, an American fur-trader, crossed the Great Basin and pushed the advancing frontier through the last bit of unexplored territory. In 1826, Smith traveled south from the Great Salt Lake and crossed the southeastern corner of Nevada on his way to California. He followed what is now Nevada's Virgin River to the Colorado River, encountering Paiute and Mohave Indians on the present border between Arizona and Nevada. Returning from California in 1827, Smith's party crossed the center of what became Nevada. He was the first American to furnish information on the Nevada area of the Great Basin.

During 1825–29, Peter Skene Ogden led the British Hudson's Bay Company trappers up the Columbia and Snake Rivers into northeastern Nevada, where they discovered the Humboldt River. Other trappers and traders followed Smith and Ogden and by 1830 southern Nevada was fairly well known and central Nevada had been crossed from west to east.

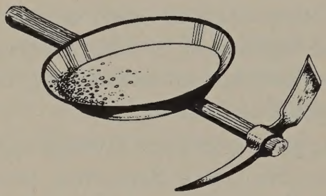
The last great organized attempt to find beaver streams in the Great Basin was conducted by Joseph Walker, who traveled down the Humboldt and across to California in 1833. Walker was chief lieutenant for the expedition of Captain Benjamin Louis Eulalie de Bonneville, on leave from the Army. A vague story of Bonneville's adventures was chronicled by Washington Irving. The intentions and details of Bonneville's journey have puzzled historians, but the contributions of the expedition were highly important. Walker's route from the Great Salt Lake to the Pacific coast became, a few years later, the one over which thousands of gold seekers traveled to California; still later, part of it became the route of the first transcontinental railroad. Walker's maps, turned over to the War Department by de Bonneville, gave the Federal Government its first information of the territory.

By 1840, profits from fur trading had greatly declined, but the fur traders' knowledge of the West was invaluable. The fur hunters knew the resources of the Far West, and brought back reports and stories of what they saw to the Eastern States. To study the possibilities of this vast region, the Federal Government organized exploring parties.

(Right) The handsome State Capitol Building in Carson City is the center of visitor information for Nevada.

(Center) Alive in the era of boom-town mining, Rawhide is one of Nevada's silent but picturesque ghost towns.

(Far Right) Nevada's progressiveness is reflected in architecture such as this at the University of Nevada.

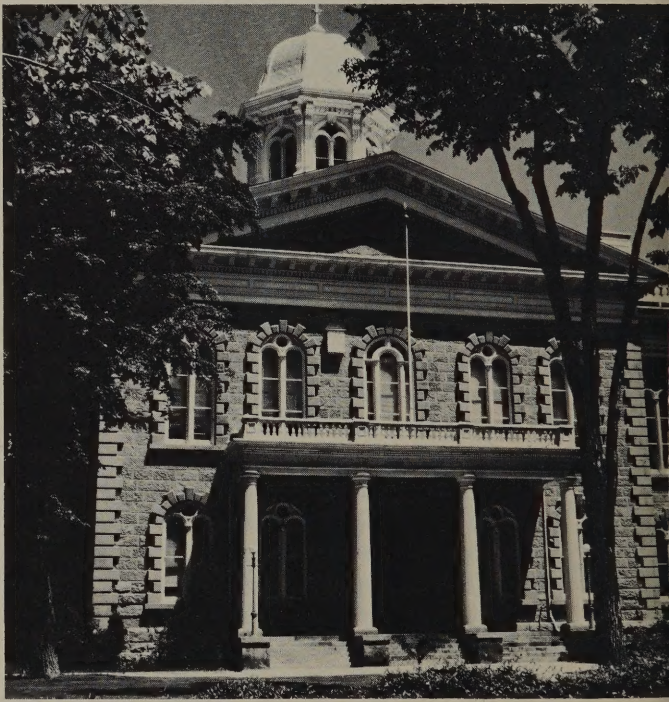


Captain John Charles Fremont led the first official exploring expedition to the Great Basin. His undertaking was stimulated by proponents of the "manifest destiny" expansionist program —that the United States should extend continent-wide boundaries to the Pacific Ocean and develop the enormous natural wealth of this area. The Fremont party crossed Nevada in 1844, setting up camp at Las Vegas, and returned in 1845 to explore the area more thoroughly. With few exceptions, the names Fremont gave to mountains, rivers, lakes, and valleys remain today.

Fremont's reports greatly stimulated the opening of the West and the influx of settlers to Nevada. More and more emigrants followed Fremont's maps across the long stretch of desert and sagebrush. Stories of the hardships they encountered have become legends today. Yet, they braved the desert and soon discovered great natural wealth in the land around them.

Settlement and Statehood

By the Treaty of Guadalupe-Hidalgo in 1848 which ended the Mexican War, Nevada was among the lands that became U.S. territory.



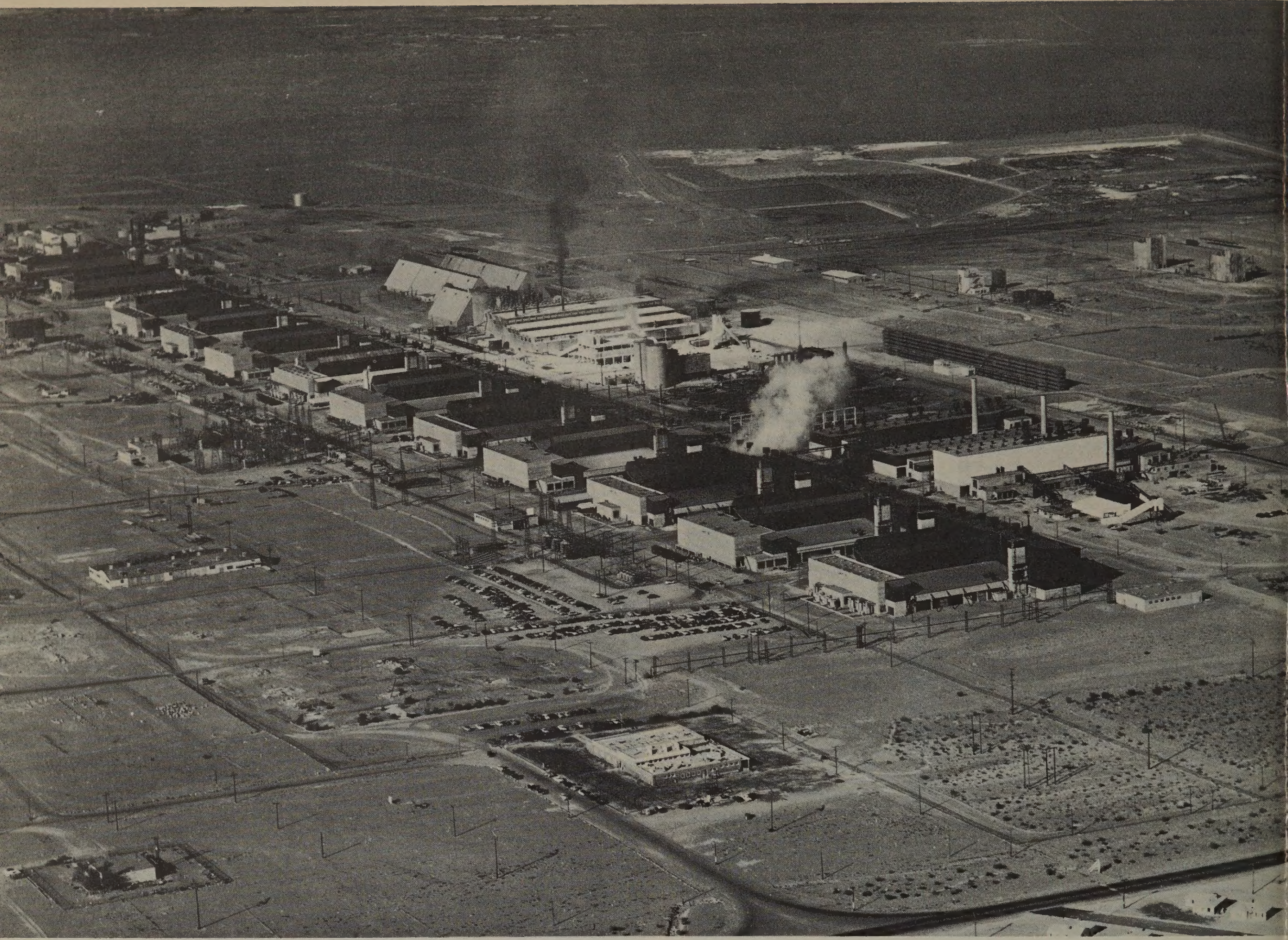
Over the routes through Nevada came Mormons and other pioneers. In 1849, Brigham Young announced the organization of the State of Deseret which included Nevada, and in the same year the great gold rush brought possibly 25,000 people through the area. Trading posts, scattered farms, and settlements followed in the wake of the rush. Nevada became western Utah in 1850 when the United States created the Territory of Utah and appointed Brigham Young as Governor. Carson Valley, settled by the Mormons from Utah, saw the beginning of farming and livestock raising and advances in transportation and communication. Colonies were scattered wherever there was water for irrigation. Las Vegas was settled by Mormons in 1855.

But Mormon conflict with the Federal Government in 1857 resulted in Young's recalling his settlers from Nevada to Salt Lake City. Efforts to make Nevada a separate Territory in 1857 and 1858 failed. It was the discovery and development of precious metal deposits in 1859 that was to bring Nevada both fame and Territorial government. In that year, the vast quantities of silver found in Nevada lodes, like the fabled Comstock, captured men's imaginations across the land, and the stampede over the mountains was on again. Nevada ceased to be merely a highway to California and became a stopping place.

With the rush of newcomers and prospectors came the need for responsible government. Conflicts over mining rights were often settled by gun in a land where no government existed. Indian unrest and violence grew as the thousands of newcomers killed the Indian's game and brought changes to the face of the country.

Finally, Congress listened to the pleas that a separate Territorial government be set up for Nevada. On March 2, 1861, boundaries including sections of Utah and California became the Nevada Territory. A few years later, two additional pieces of Utah and a section of Arizona were added to Nevada. James W. Nye of New York was appointed Territorial Governor and Carson City was made the capital. The early government suffered many trials in bringing order to a region which had had less than a thousand people 2 years before but in 1861 had probably 20,000, exclusive of transients.

The national situation influenced Nevada's political history during the next 3 years. The mining of silver and gold became of vital importance to the United States with the outbreak of the Civil War. A movement was initiated to give statehood to Nevada. Although the Territory had less than a sixth of the population then required for a single Representative in Congress, proponents of statehood argued that under a stable government, and with the booming mineral economy, Nevada's population



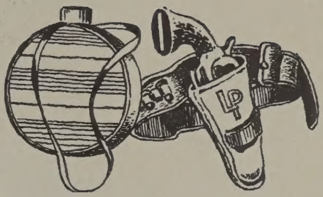
would grow. After two constitutional conventions, Nevada was proclaimed a State on October 31, 1864. H. G. Blasdel, who got his start as a mining engineer in Virginia City, was elected first State Governor. Nevada was loyal to the Union through the Civil War and her troops were useful in subduing hostile Indians.

Progress to the Present

The history of Nevada after its organization as a State was largely the story of its mines. Discovery of the Comstock lode led to a wave of prospecting which resulted in the discovery, chiefly during the 1860's, of many deposits whose total production has aggregated hundreds of millions of dollars. But by the 1880's the easily mined gold and silver ores had been largely exhausted. For more than a decade thereafter mining was practically dormant.

But silver had opened the way to Nevada and the entrance was not to be closed. The completion of the railroad from the Missouri River to the Pacific Ocean in 1869 was the most dramatic effort of the white man to conquer the desert. The railroad followed the Humboldt River Valley across most of Nevada and forever vanquished the terrors of the desert crossing.

During the period of depression in the mining industry, large-scale ranching began as irrigation came to the fertile valley lands in the 1890's. A number of beautiful valley towns now have prosperity founded on agriculture. In the wake of mining fluctuations, Nevada's population often underwent violent changes, as evidenced by such once booming but now desolate towns as Virginia City, seat of the Comstock lode. With the demonetization of



(Above) Cowboys round up cattle on a Nevada ranch. The livestock industry is important to the State's economy.

(Left) Several chemical and metal firms are located in the industrial complex of Henderson near Las Vegas.

(Right) Irrigation makes agriculture possible in Nevada, where alfalfa, wheat, potatoes, and cotton are produced.

silver, which closed nearly half of the mines in the State, Nevada's age of silver came to an end. In 1900 the almost accidental discovery of silver deposits at Tonopah started a new wave of prospecting with attention directed toward promising outcrops. But in the long run, the most important strike of the period involved the discovery of copper. When the richest silver and gold deposits were exhausted, copper moved to the fore as Nevada's leading mineral product.

Little more than a century after its settlement, Nevada is now the home of nearly one-half million people who year after year enjoy one of the highest per capita incomes of any State in the Union. From 6,857 people in 1860, Nevada's population has swelled to more than 440,000, with population centered in its two principal cities, Las Vegas and Reno. Other major cities include Ely, Elko, Sparks, and Henderson. In the last decade alone, Nevada's population has increased 79 percent and is continuing to grow. But with its large land area—109,788 square miles—Nevada is a sparsely settled State. It ranks 7th in size but 49th in population—only Alaska is less densely inhabited. It is more than twice the size of New York State, but all its people could live in some 10- by 20-block areas of New York City.

Made famous by its mines, Nevada today produces large quantities of gold, silver, copper, lead, zinc, mercury, and tungsten. The livestock industry is a major support for the State's economy and the agricultural crop consists mainly of hay, wheat, barley, potatoes, corn, and cotton.

Physical Characteristics

Nevada covers a land and water area of 110,540 square miles and its great length of 484 miles spans 7° of latitude. Nevada's land area is about equally divided between mountains and valleys. It is bounded on the north by eastern Oregon and the western half of Idaho, on the east by Utah and the northwest section of Arizona, and on the west and south by California.

Nevada lies just east of the massive Sierra Nevada mountain range. All but the extreme northern part of the State lies in the Great Basin, which is characterized by internal drainage with no outlet to the sea. The area south and east of Las Vegas is in the Sonoran Desert and the extreme northern part of the State is in the Columbia Plateau's province.

With few exceptions Nevada's rivers find their way into lakes, or end in desert sinks within the State. The State's largest rivers include the Humboldt in northern Nevada; the Carson and Walker Rivers in the western part of the State; and the Truckee, fed by Lake Tahoe and empty-

Nevada is a land of physical opposites, ranging from towering Wheeler Peak to level valleys and low desert expanses. Much of the State falls in the Great Basin, but the high country is dotted with lush evergreens and beautiful lakes.

ing into Pyramid Lake. Pyramid Lake and Walker Lake, the two permanent lakes in the Great Basin, together cover about 400 square miles. The only drainage to the sea is accomplished via the Virgin and Colorado Rivers in the extreme southeast, and by the South Fork of the Owyhee River and a few other small tributaries of the Snake River in the extreme north.

Ranging in elevation from less than 500 to more than 13,000 feet, Nevada has a varied and rugged topography with mountain ranges, narrow valleys, and low, sage-covered deserts. Snow-capped Boundary Peak on the State's western border and Wheeler Peak near the eastern border rise to over 13,000 feet. The mean elevation of Nevada is about 5,500 feet, with the altitude of both valleys and mountain ranges generally increasing northward and eastward across the State.

The landscape of virtually the entire State is characterized by dozens of rugged north-south mountain ranges 5 to 20 miles wide, separated by broad flat valleys of about the same width. A pioneer geologist likened the ranges to "an army of caterpillars crawling toward Mexico." The only east-west range is in the northeast, forming the southern limit of the Columbia River Basin.

Geologic Changes Shape Landscape

The rocks that form the mountains and valleys of Nevada record a geologic history that dates back at least 1.6 billion years. The oldest rocks—and those of which there is least knowledge—are of Precambrian age. The core of the precipitous Ruby Mountains east of Elko is formed of these ancient rocks—schist, gneiss, marble, and granite—and they also appear in the Snake Range east of Ely and in the extreme southern end of the State. Highly deformed and contorted, these ranges record violent earth movements that occurred long before the first living organisms came into existence.

Most of the mountains in the eastern part of Nevada are made up of great thicknesses of limestone, dolomite, and a very hard sandstone called quartzite. These rocks were deposited as layers in shallow waters. In places they contain fossils belonging to the Cambrian Period of the Paleozoic Era, which began nearly 600 million years ago.

Above the Cambrian rocks are sedimentary formations representing later periods of the Paleozoic Era, as well as formations belonging to the Triassic and Jurassic Periods of the Mesozoic Era. Earth movements have so strongly disturbed these formations that in many places older rocks have been placed on top of newer ones as a result.

In western Nevada, shale or hardened mud, deposited on the floor of the sea when the seas inundated parts of the continent, is interlayered with limestone and a very dense, hard rock called chert to form many of the mountains south of the latitude of Tonopah.

North of that latitude, dark-colored lavas, which were erupted from volcanoes active about 150 to 200 million years ago during latest Paleozoic and early Mesozoic times, are conspicuous in the mountain ranges.

The record in the rocks shows that earth disturbances occurred several times during the Paleozoic Era, but by far the most violent movements took place about 130 million to 150 million years ago. It was then that most of the complex bends or folds now visible in the rocks were formed. The great mass of granite of which the Sierra Nevada is built came into being at this time as a molten body of rock that solidified beneath the surface. Smaller bodies of granite exposed at many places throughout the western part of Nevada are probably connected with each other and with the granite of the Sierra Nevada at a depth of a few thousand feet below the present land surface.

The violent earth convulsions and granite-forming processes diminished in intensity about 100 million years ago. However, the crust remained restless, and about 30 million years ago, a new upheaval started. Great fissures, trending mostly north-south, broke the crust and huge volcanoes, discharging thousands of cubic miles of molten lava and volcanic ash, inundated much of the landscape. The fissures or faults were planes along which blocks of the broken crust moved either up or down relative to the adjoining block. In many cases this movement was thousands or even tens of thousands of feet, and the result was a series of elongated blocks tilted at various angles, the high side of one block adjoining the low side of the one next to it. The low sides thus became the valleys and the high sides the mountain ranges.

Many of the valleys soon were filled with fresh water and became large lakes in which lived fish and other animals, and into which material worn from the nearby ranges were deposited. Volcanoes continued to belch lava and ash which in many areas covered the deposited lake material.

During the Ice Age, called the Pleistocene, volcanic activity died down and a large lake named "Lahontan" covered many square miles in western Nevada and northeastern California. Walker Lake and Pyramid Lake are remnants of Lake Lahontan. The multitude of terraces, left as this great lake receded after the Ice Age, are plainly visible around the edges of Walker and Pyramid Lakes and around Carson Sink.

The form of the Nevada landscape has changed very little in the last 50,000 years or so since the Ice Age ended, but strong earthquakes at fairly frequent intervals serve notice that Mother Earth is still restless.

Varied Climate

Nevada offers a great variety of climate, but common characteristics of all parts of the State are dry, clear air, low annual rainfall, long periods of brilliant sunshine, and large daily ranges of temperature. Winters are coldest in the northeastern part of the State, the temperature sometimes going far below zero near the Idaho line. Because of the mild winter climate of both Las Vegas and Reno, and their nearness to snow-covered slopes, both cities are centers of winter sports activities. Prolonged periods of extremely cold weather are rare because the mountains to the east and north of the State act as a barrier to the continent's arctic airmasses.

Mean annual temperatures vary from the middle 40's in the northeastern part of the State to around 50° in the west and to the middle 60's in the south. In summer, temperatures above 100° occur rather frequently in the extreme southern portion of the State and occasionally elsewhere in Nevada. However, humidity is normally low.

Nevada's precipitation occurs mostly during the winter and on the average is less than in any other State, due primarily to the mountain barrier. The eastern slope of the Sierra Nevada, on the western border of the State, receives the greatest moisture, and the low plateaus in the lower parts of Humboldt and Pershing Counties, extending southward to the Amargosa and Ralston Deserts, receive the least. A most unusual dense fog, known as pogonip, appears at times during the winter, covering everything with beautiful radiating frost crystals.

Nevada's diversity of climate results in an abundance of varied plantlife from the highest peaks to the lowest valleys. Even the desert blooms, and in fall when the salicornia turns red, it makes a splash of brilliant color against the white patches of alkali. The State has 28 species of cacti and many species of sagebrush.

Steam from underground hot springs, a geologic phenomenon, rise from land fissures near Fernley. Projects are underway to harness such steam into electrical energy.

Long ago, earth movements produced the rock formations near Ely which are appropriately called The Narrows.

Fish and Wildlife

A species of animal unique to the continent, the pronghorn antelope is the fastest animal in North America.

With vast open spaces and an abundance of fish and wildlife, Nevada lures thousands of visitors each year to test their hunting and fishing skills, to take pictures, or to catch glimpses of such majestic animals as the bighorn sheep. Hunting and fishing are big business in the State, with more than 100,000 sportsmen—nearly one-half from out of the State—spending about $20 million in a recent year.

About 95,000 square miles of Nevada are available for hunting during the open season. Famous for deer hunting, Nevada is also a paradise for hunters of quail, sage grouse, chukar, and duck. The rivers, streams, and lakes abound with many varieties of native trout and other species of game fish, and total more than 2,000 miles of fishing waters. Along the Pacific Flyway, Nevada has hundreds of thousands of acres of wetlands that provide excellent waterfowl hunting.

Game Birds and Animals

Upland game bird hunting is one of the most enjoyable forms of outdoor recreation for many Nevadans. Several native upland game birds are found in the State and new species have been introduced. The sage hen or sage grouse, one of the State's most prized game birds, is most common in the northern section. Through careful conservation and protection measures, the sage grouse, once greatly reduced in numbers from overshooting, has assumed new importance. In a recent year 19,000 birds were bagged—an average of 2 birds per hunter per day. Another grouse, the big blue or dusky, inhabits the mountainous areas of the State.

Valley, mountain, and Gambel's quail are plentiful, with 88,000 quail taken during a recent hunting season. The valley quail, the most abundant species, inhabits lower levels in the northern section and the mountain quail the higher elevations of Nevada. Gambel's quail are common in the southern part.

Ring-necked pheasant and chukar partridge are among Nevada's introduced game birds. Chukars are abundant in the desert mountain ranges and the pheasant is found in agricultural areas of the State.

Nevada's most popular game animal is the mule deer which has a population of about 225,000 distributed throughout the State. An average of 30,000 hunters annually bag more than 25,000 deer. Deer are also hunted on the Charles Sheldon National Wildlife Refuge and on the game range which adjoins it. In recent years, a statewide archery season for deer, preceding the rifle season, has become increasingly popular.

The State fish and game commission recently estimated that 2,500 bighorn sheep, 260 elk, and 3,000 antelope were included in the big-game population.

The last stronghold of the Nevada desert or Nelson bighorn sheep is in Clark County. The Desert Game Range, a few miles from Las Vegas, was established primarly for this endangered game animal. It has an estimated population of 1,500 bighorn.

Two small elk herds, one in White Pine County and the other in the Charleston Mountains, are in a static condition. Nevada has limited elk range for these introduced animals.

The pronghorn antelope, a species unique to North America, is found in the national forests of White Pine County. The largest number in Nevada, however, are in the Charles Sheldon National Antelope Refuge and Game Range in Washoe County.

Fur-bearing animals, although scarce, occur in good number along the Humboldt River. Western badger is found in almost all sage-covered areas, American mink and muskrat in

Graceful and proud, Nevada's wild horses and desert bighorn sheep run free in areas set aside for their preservation. Nevada has the only Federal refuge for wild horses; the Desert Game Range provides habitat for the State's bighorn.

the western part of the State, and red fox in eastern Nevada. Other small animals include coyotes, kit fox, raccoon, and porcupine.

Sport Fishing

Nevada's gigantic Lahontan cutthroat trout has worldwide fame. This fish, the only trout native to western Nevada, is found principally in Walker, Pyramid, Topaz, Catnip, and Summit Lakes. The record catch for this fish is 65 pounds, with the average weight about 30 pounds. In the waters of Lake Tahoe is the famed Mackinaw trout, weighing up to 30 pounds and the State's only deep-water fish.

The Truckee River, flowing from Lake Tahoe into Pyramid Lake to the north, is known for its rainbow trout, the State's most important game fish. In Walker Lake is also the Walker Lake bass, locally called a "crappie". Lake Topaz is noted for Lock Leven and brook trout fishing. The Owyhee and Salmon Rivers, flowing toward the Columbia, provide excellent steelhead and chinook sport fishing.

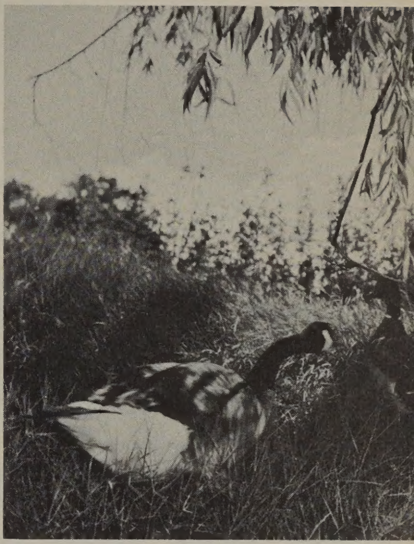
The fishery resource is an important economic asset to the State. Anglers spend more than a million dollars for their licenses and permits. In a recent year more than 240,000 such licenses and permits were sold in Nevada, and of these more than 80,000 were purchased by out-of-State anglers.

To maintain its plentiful fishery resources, Nevada supports five State fish hatcheries and rearing stations to produce stock for its waters. By 1976 it is estimated that sport fishing in Nevada will have increased 100 percent. In its fishery management program and continuing research, Nevada is planning for the future by conserving and propagating many species of fish for the State's rivers and streams.

The Bureau of Sport Fisheries and Wildlife of the Department of the Interior assists the State in stocking programs and conducts many of its own programs to enhance further the fishery resources of the State. Although there are no national fish hatcheries in Nevada, fish are distributed to Nevada waters from hatcheries located in other States. Most of these fish are produced at the Hagerman National Fish Hatchery in Idaho. In a recent year, national fish hatcheries provided 57,365 pounds of pondfish species, cutthroat, and rainbow trout for distribution in Nevada.

A new national fish hatchery, recently authorized for construction in Nevada, will produce cutthroat and rainbow trout principally for waters in the Washoe reclamation project. Annual production will amount to approximately 35,000 pounds of cutthroat for Pyramid

Along the Pacific Flyway, Nevada's wetlands are resting grounds for such waterfowl as Canada geese and mallard ducks. Possibly the largest white pelican colony in North America nests at Anaho Island Refuge in Pyramid Lake.



and Walker Lakes and 40,000 pounds of rainbow trout for other waters.

Wildlife Refuges

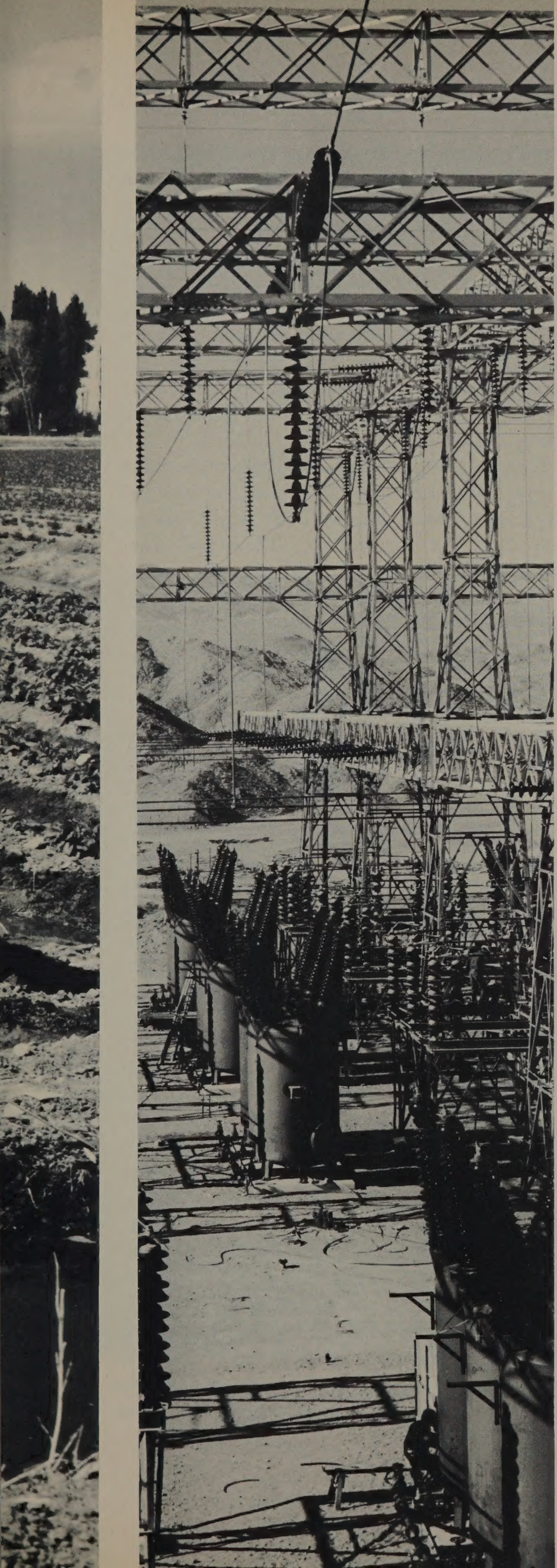
Continued existence and well-being of Nevada's wildlife depend on adequate habitat and food supply available for the animals. To maintain land for wildlife purposes, the State fish and game commission has acquired 10 wildlife management areas totaling some 282,104 acres. Wildlife projects, such as land acquisition and research studies, are financed in part through the Federal Aid in Wildlife Restoration program.

To preserve various species of big game, songbirds, and waterfowl, the Bureau of Sport Fisheries and Wildlife of the Department of the Interior administers eight refuges and game ranges in Nevada. The Desert Game Range, an extensive area of over 2 million acres north of Las Vegas, provides habitat for Nelson bighorn sheep, mule deer, pronghorn antelope, and other desert mammals and birds. Ruby Lake National Wildlife Refuge, about 60 miles southeast of Elko in the Ruby Mountains, contains over 35,000 acres of marsh, lake, and sagebrush habitat for trumpeter swans, Canada geese, ducks, sandhill cranes, and sage grouse. Sheldon National Antelope Refuge and Charles Sheldon Antelope Range are two contiguous areas comprising 579,000 acres of high desert land in northwestern Nevada. Besides preserving pronghorn antelope, the refuge and range provide habitats for large numbers of mule deer, sage grouse, and limited numbers of waterfowl.

Stillwater National Wildlife Refuge, a 24,000-acre tract managed by the Bureau and the Nevada Game Commission, provides resting and feeding for waterfowl, marshbirds, and shore birds. The Anaho Island National Wildlife Refuge on a rocky island in Pyramid Lake contains possibly the largest white pelican nesting colony in North America. Anaho Island is also populated by cormorants and gull colonies. Fallon National Wildlife Refuge contains 17,900 acres. Pahranaget National Wildlife Refuge, a recent addition, is a 5,203-acre waterfowl area.

State refuges include Beaver Dam, Valley of Fire, Cathedral Gorge, Kershaw Canyon, Ryan, and Fort Churchill.

In southern Nevada, the Bureau of Land Management of the Department of the Interior, in cooperation with the Nevada Game and Fish Commission and the Nellis Air Force Base, administers a 435,000-acre refuge for wild horses. The Nevada tract is the only Federal area set aside for wild horses. The range is devoted to preserving the animals by allowing them to run free from the control, and often from the sight, of a human being.



Water and Power

Water, important in the history of Nevada, is vital to the future of the State. The first settlers, and the Indians who preceded them, often experienced the hardships of water shortages before they learned to harness and develop the resource to meet their needs. Harvesting of Nevada's fabulous mineral wealth has always depended on the availability of water for processing ores. Today, water also supports the thriving livestock industry, agricultural, municipal, and industrial growth, and provides an essential source of power.

In the future, even greater demands will be made on the water supply of the State for a variety of uses. It is estimated that by the year 2000, area water requirements will increase more than 200 percent over present usage. Full development of present sources of water supply will help sustain Nevada's economic growth.

Sources of Supply

Water resources of Nevada include both surface and underground supplies. Surface water supplies are only nominally developed, but the development of underground resources has been extensive and, in many cases, exceeds the local continuous capability of the underground-water system.

Drainage in the Great Basin watersheds provides the State with its most significant surface water. Running west across the northern part of the State is the Humboldt River and tributaries, which have a drainage area above Humboldt Lake of 14,200 square miles. It is the longest river contained entirely within the boundaries of one State. Other Great Basin rivers and lakes that serve Nevada are the Truckee River, Carson River, Walker Lake, Owens Lake, and Mono Lake, located along the

When harnessed and developed, water serves many needs. It is a source of electrical power for Nevada's homes and industries; an essential support for agriculture.

Nevada-California border. In the southeast are the resources of the Colorado River and its two major Nevada tributaries, the Virgin and Muddy Rivers.

Use of Colorado River water in Nevada is limited by contracts and agreements for sharing the waters of the Colorado River system with other States in the Colorado River drainage basin.

Major underground-water resources exist in the Las Vegas and Pahrump Valleys of southern Nevada, and to lesser degrees in isolated valleys. In Las Vegas Valley a severe overdraft has resulted in loss of artesian pressures, sinking of land, and some deterioration of the quality of the underground water.

Overall precipitation in Nevada averages about 7 inches annually and is particularly sparse in the southern part of the State. The bulk of precipitation occurs in spotty thunderstorms, often resulting in severe local flooding.

Nevada is presently studying its water problems. State and Federal agencies are conducting studies to determine the availability of underground water and to learn how to reduce the waste of water from evaporation and from overuse by vegetation that has little or no economic value. Waste from such vegetation totals five times the amount of water Nevada gains from sharing the resources of the Colorado River.

Water Developments

Nevada is the scene of many important water resource developments and accomplishments. The impact of these developments upon the State and national economy and welfare has been tremendous. Nevada has already demonstrated that water deficiencies need not impoverish an intelligent and resourceful community.

Federal agencies, such as the Department of the Interior's Bureau of Reclamation and the U.S. Army Corps of Engineers, have worked and will continue to work for ways to relieve areas of water shortages. Nevada has been the scene of one of the original reclamation developments, the first great multipurpose project, and several other irrigation and storage projects.

The Newlands Project, located on 87, 500 acres of level and gently rolling land in western Nevada, has brought the benefits of irrigation to the agricultural community. Alfalfa, the principal crop on these lands and valued at over $2 million in a recent year, is vital to cattle and sheep enterprises, dairying, and hog fattening. Other crops raised are sugarbeets and melons. Principal markets for the produce of the project are mining camps of western and central Nevada and the Pacific Coast cities. Since water first started flowing to the dry lands, more than $91 million worth of crops has been produced on the project.

Included in the Newlands Project are Lake Tahoe Dam, Lahontan Dam and Reservoir, and Boca Dam, which provide both water storage and recreation opportunity. These and other features of this project, which regulates and makes use of the Carson and Truckee Rivers, are described in more detail in the Bureau of Reclamation section of this booklet.

The Humboldt Project in Lovelock Valley in northwestern Nevada services about 40, 000 acres with water stored from the Humboldt River by Rye Patch Dam and Reservoir. Two shallow reclamation dams, and two dams built by the Humboldt-Lovelock Power & Irrigation Co., also store water for release to project lands. Under a rehabilitation and betterment program, Battle Mountain Water Development became the major feature of the Humboldt Project. Seven ranches, with their appurtenant water rights, were purchased by Reclamation in the vicinity of Battle Mountain for increasing the project water supply. Construction of channels, levees, and diversion dams facilitates removal of the water from these ranches to the project lands.

In a recent year, harvested crops and pasture on Humboldt Project lands were valued at more than $2 million. One-third of the principal crop, alfalfa, is sold to California markets.

Mighty Hoover Dam harnesses the Colorado River with one shoulder on Nevada and the other on Arizona. Constructed by the Department of the Interior's Bureau of Reclamation in 1931–35, Hoover Dam was selected by the American Society of Civil Engineers as one of the Nation's Seven Modern Civil Engineering Wonders. It is part of Boulder Canyon Project, which is located in Clark

This Nevada ranch pumps water from underground sources which will nourish both its land and livestock.

Boating and other water sports are popular at Lake Mead, the reservoir that stretches 117 miles behind Hoover Dam.

County, Nev., and Mohave County, Ariz. Built in a region declared worthless by the War Department in 1857, Hoover Dam now is an established symbol of all of Reclamation's multipurpose benefits—flood protection, river control, water storage, hydroelectric energy, and improvement of navigational, recreational facilities, and fish and wildlife protection.

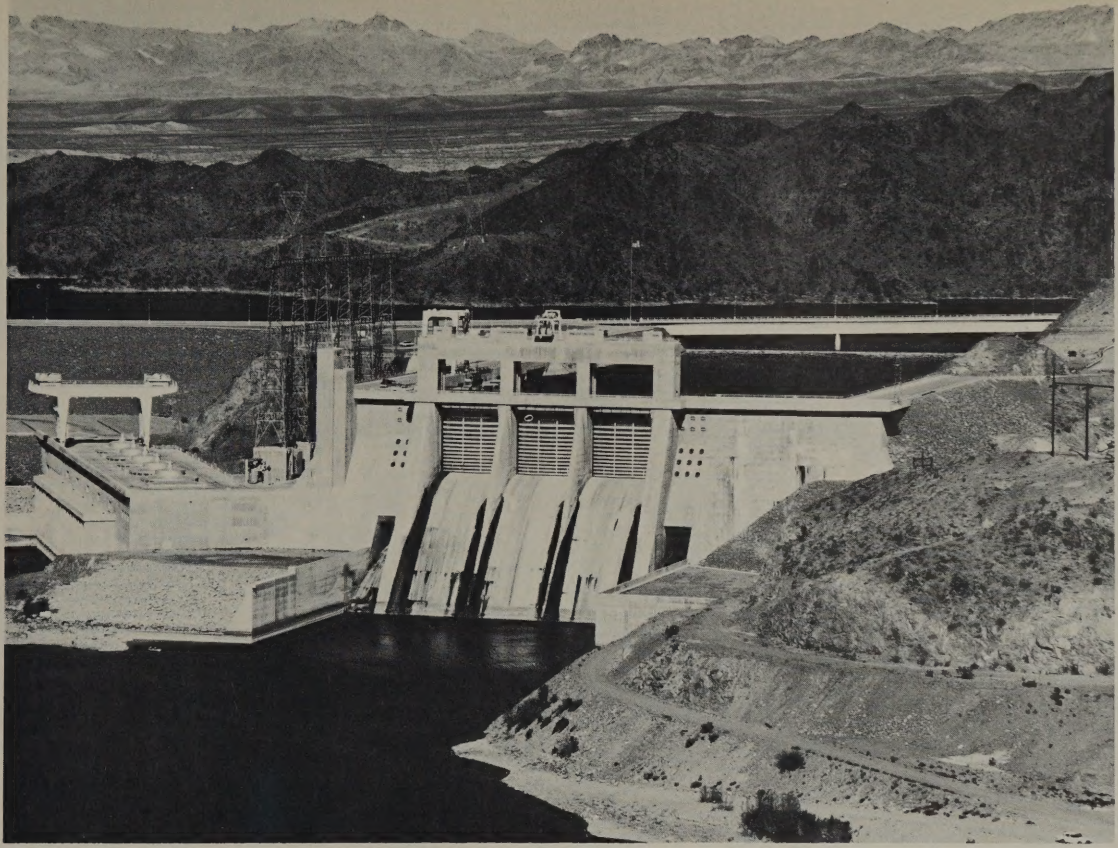
Rising 726 feet above bedrock, Hoover Dam still holds the distinction of being the Western Hemisphere's highest. Hoover's reservoir, Lake Mead—backing up 117 miles behind the dam—is capable of storing nearly 30 million-acre-feet of water, enough to cover nearly 30 million acres at a depth of 1 foot. Lake Mead extends upstream into Bridge Canyon at the lower end of the Grand Canyon of the Colorado, creating one of America's most popular recreation areas.

Davis Dam, another multipurpose project on the Colorado River, backs up the freshwater Lake Mohave and provides power production. The combined lakes of Davis and Hoover Dams have meant vast recreation opportunity for Nevada by forming Lake Mead National Recreation Area.

The Truckee storage project supplies water from the Truckee River to 29,000 acres of land surrounding the cities of Reno and Sparks. In addition to crop and livestock raising, dairying is extensive in this area. The Washoe Project, with construction still underway and the first of five dams completed, comprises an area of the Lahontan Basin and the Truckee and Carson Rivers.

Two water development projects in Nevada are included in the Pacific Southwest Water Plan, proposed by the Department of the Interior in early 1964. The proposed plan represents a comprehensive approach to meeting the present and future water and power needs of the Pacific Southwest region and contains a guarantee of 0.3 million acre-feet of water annually from the lower Colorado River for use in Nevada.

The plan recommends immediate authorization of a number of water resource projects throughout the five-State Southwest region to alleviate water shortages. The Southern Nevada Water Supply Project and the Moapa Valley Pumping Project would assist southern



Davis Dam is another man-made structure which regulates the Colorado River's water for great multipurpose benefits.

Nevada farms and cities in utilizing the Colorado River. All of the Bureau of Reclamation projects are described in greater detail in the programs section of this booklet.

The U. S. Army Corps of Engineers has constructed two reservoirs for flood-control in Lincoln County and channel improvements on the Truckee River and its tributaries.

Power Resources

The predominant source of power in Nevada is water, and hydroelectric power represents 69.5 percent of the total installed electric generating capacity (982,837 kilowatts) of the State. The remainder (299,877 kilowatts) is from steam-generating plants operating on coal, oil, or gas. Part of the State's power requirements is generated outside of the State and is bought by Nevada interests.

Two of the Bureau of Reclamation's largest hydroelectric power installations are partially in southern Nevada. Hoover Powerplant on the lower Colorado River 7 miles northeast of Boulder City, and Davis Powerplant, 67 miles downstream, have a combined installation of 1,569,800 kilowatts, and an average annual output of about 5.7 billion kilowatt-hours.

Nevada receives almost 18 percent of the power of the Hoover Powerplant and about 27 percent of the output of the Davis Powerplant. The growing industrial complex in Henderson and Las Vegas, plus the rapidly expanding population throughout southern Nevada, depend on water and power benefits from Hoover and Davis Dams and Powerplants. Small hydroplants have been installed on the Carson and Truckee Rivers in west-central Nevada, as well as on smaller rivers and creeks in other parts of the State.

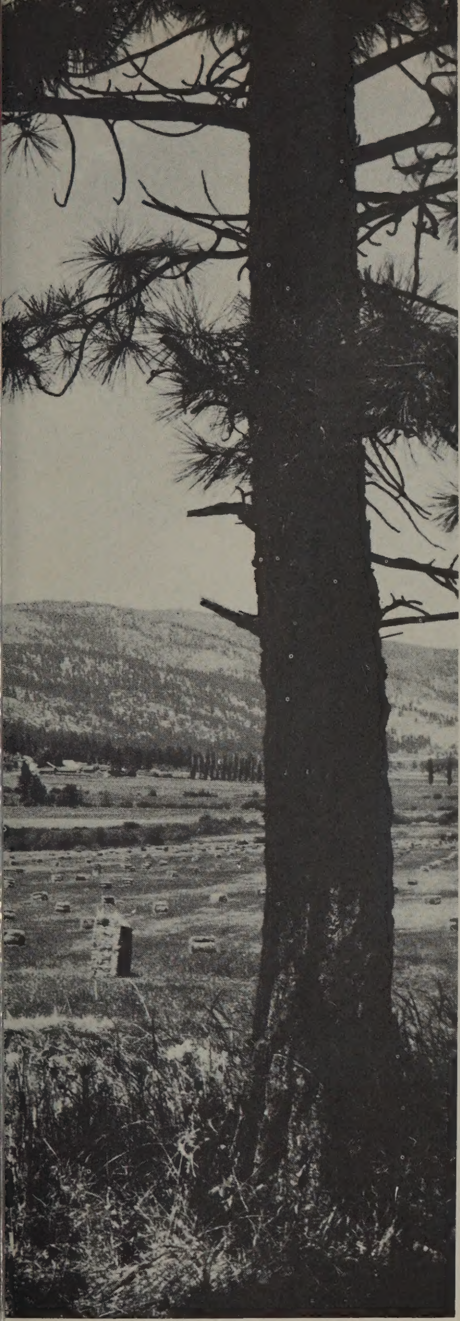
Total hydroelectric power resources of Nevada are estimated at some 713,160 kilowatts. About 96 percent—or 682,960 kilowatts of the hydropower resources—have been developed.

The average annual generation available to the State from Hoover and Davis hydroelectric power plants is estimated at 1.1 billion kilowatt-hours. The undeveloped hydroelectric capacity is estimated to be capable of an average annual generation of 158 million kilowatt-hours, making the State's total potential average annual generation 1.2 billion kilowatt-hours.

Cattle and sheep ranching, Nevada's most important form of agriculture, depends heavily on the land for hay and forage and

Land and Forests

About 86 percent of the 70,264,320 acres in Nevada is under Federal jurisdiction, leaving about 9 million acres under private, State, and local government ownership. Public land is administered by the following Federal agencies: Bureau of Land Management, 47,360,737 acres; Forest Service, 5,058,987 acres; National Park Service, 115,880 acres; Fish and Wildlife Service. 2,927,093 acres; Bureau of Indian Affairs, 7,834 acres; Department of Defense, Atomic Energy



fine grazing areas. The land also yields potatoes, corn, and cotton. Forest products include fence posts and Christmas trees.

Commission, and Bureau of Reclamation, 5,106,397 acres.

Public lands in Nevada contribute to the State's economy in a multitude of ways. In a recent year, public lands yielded about 36.5 million pounds of cattle and calves, and about 4.8 million pounds of sheep and lambs with total sales receipts of nearly $10 million. From public land every licensed hunter in Nevada could have claimed a deer. Every year over $75 million in minerals come from public land. Woodland products such as pine and fir Christmas trees and juniper posts contribute thousands of dollars annually to the local economy. The wild and rugged beauty of Nevada's public land calls many to travel, hunt, fish, camp, picnic, and to enjoy the serenity of nature.

Ranching is by far Nevada's most important form of agriculture. About 85 percent of the farm and ranch land in the State is devoted to

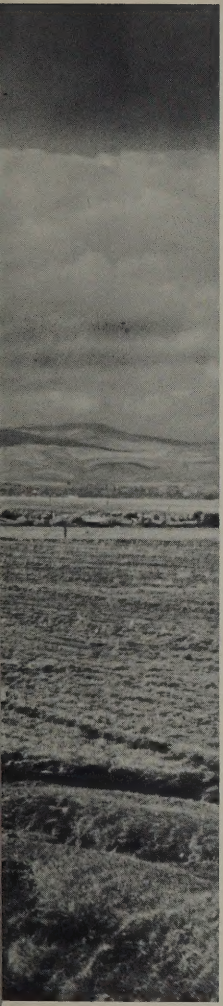
raising livestock. Sales of cattle, calves, sheep, lambs, and wool account for about three-fourths of the value of all farm production sold in Nevada—the highest proportion of any Western State. On ranches and farms in Nevada, there are about 532,000 cattle, 18,000 milk cows, 297,000 sheep and lambs, and 10,000 hogs and pigs.

Of 2,857 ranches in Nevada, 32 percent are part-time spreads and the remaining 68 percent are commercial. The average size is 2,880 acres.

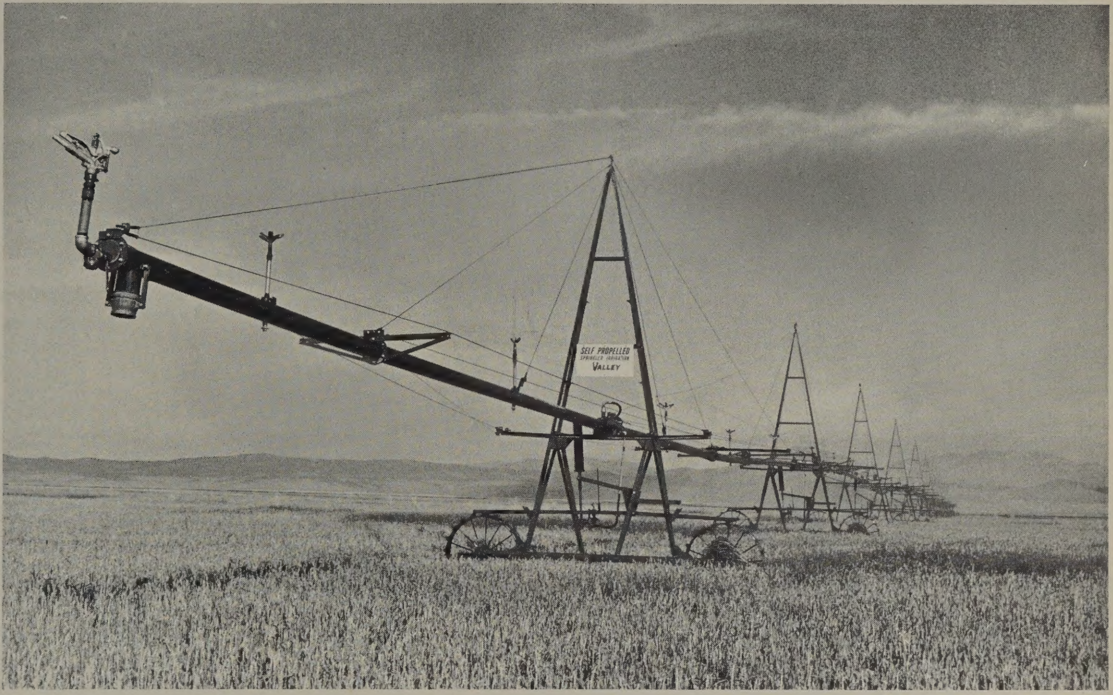
For a fee, livestock owners are allowed to graze their animals on public lands under controlled conditions. Livestockmen rely heavily on these public rangelands for a year-round operation and over 95 percent of the State's livestock graze on public lands. Generally, livestock utilize Forest Service lands for summer grazing. Spring, fall, and winter grazing is done on lower elevation rangelands administered by the Bureau of Land Management.

Because of the generally arid climate, less than 1 percent of the land in Nevada is under cultivation. Farming is dependent on irrigation and the cultivated area lies mostly in the valleys of the Walker, Carson, and Truckee Rivers, where irrigation is maintained by impounding the waters from melting snows in the Sierra Nevada; in the vicinity of Lovelock in the lower Humboldt River Valley; and in the valleys of the Muddy and Virgin Rivers in the southeastern part of the State.

No other State produces as high a percentage of its total crops in hay and forage, most of which are consumed within the State. But there are many other agricultural products in Nevada, ranging from cantaloups and turkeys in the Fallon area to cotton near Pahrump in the



(Left) Irrigation makes farming possible in Nevada's river valleys. This agricultural scene is near Reno.



(Above) This mechanical giant is a self-propelled sprinkler system, a modern method of bringing water to land which could not otherwise be cultivated.

southeastern corner of the State. Also, there are dairies and milk-processing plants, principally in western Nevada, that supply a great portion of the State with dairy products.

Forest Resources

Nevada's forest lands include approximately 12 million acres, of which 109,000 acres are classified as commercial forest land capable of growing usable stands of saw timber. Areas of these commercial forest lands are in private ownership; other acreages are in public ownership, administered by the State, the Bureau of Land Management, or the Forest Service.

Thousands of acres in Nevada are covered with pinyon and juniper trees. Each year thousands of these trees are harvested on both public and private lands for Christmas trees and fence posts and other uses.

Only 3 percent of the national forest land contains timber which is considered economically harvestable on a commercial scale. Yet these areas are vital for watershed cover, wildlife, and recreation. They also supply local communities with most of their fence posts, mine timbers, poles, and some lumber. Ponderosa and Jeffery pines are among the chief species in the small but vital harvest of 367,000 board feet in a recent year.

Most of the commercial timber species are cut from the tops of the mountains. The pinyon pines at the lower elevations are of less commercial importance, but for years they have provided a bountiful supply of nuts for local consumption. The excess finds a ready market.

As new uses for forest products are discovered, Nevada's woodlands will become increasingly important.

DANGER

Mineral Resources

Metals have dominated Nevada's mineral economy ever since prospectors first found gold in the high Sierras during the 1850's. In most years minerals have dominated the State's entire economy. Her lode deposits have yielded more than $2.5 billion in gold, silver, copper, lead, and zinc.

After 1859, when records began to be kept, the vast quantities of silver found in Nevada lodes like the fabled Comstock and, later, the Tonopah, made Nevada known as the "Silver State." Although this metal helped provide the silver dollar "hard base" for Civil War greenbacks, its value was exceeded by that of gold being mined simultaneously in all but a few bonanza years. From 1859 to the present, the value of all silver shipped from Nevada's mines and smelters is estimated at something less than $560 million, whereas her total gold output is valued at more than $625 million.

Copper production in Nevada boomed first in World War I, again during the Second World War, and reached a record high—over $125 million—in 1956. More than $1 billion worth of copper has come from the State's mines since output first was recorded. Despite highs and lows, the value of annual copper production has averaged above $50 million for a decade, and the red metal has been Nevada's principal

Modern techniques are used to obtain copper ore, Nevada's leading mineral, from huge open-pit mines (right). The ore is then processed in mills such as this above.

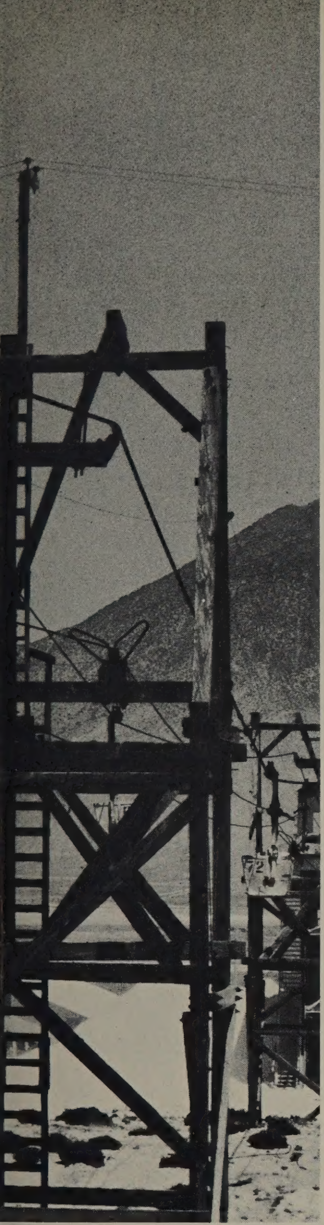
product in most years since 1910. Gold and silver, as well as lead and several other metals, are today mined principally as byproducts or coproducts of copper.

Today, the mineral industry is still the most important segment of Nevada's economy in terms of output value. Its 4,000 workers produce raw materials with an average value of over $80 million annually.

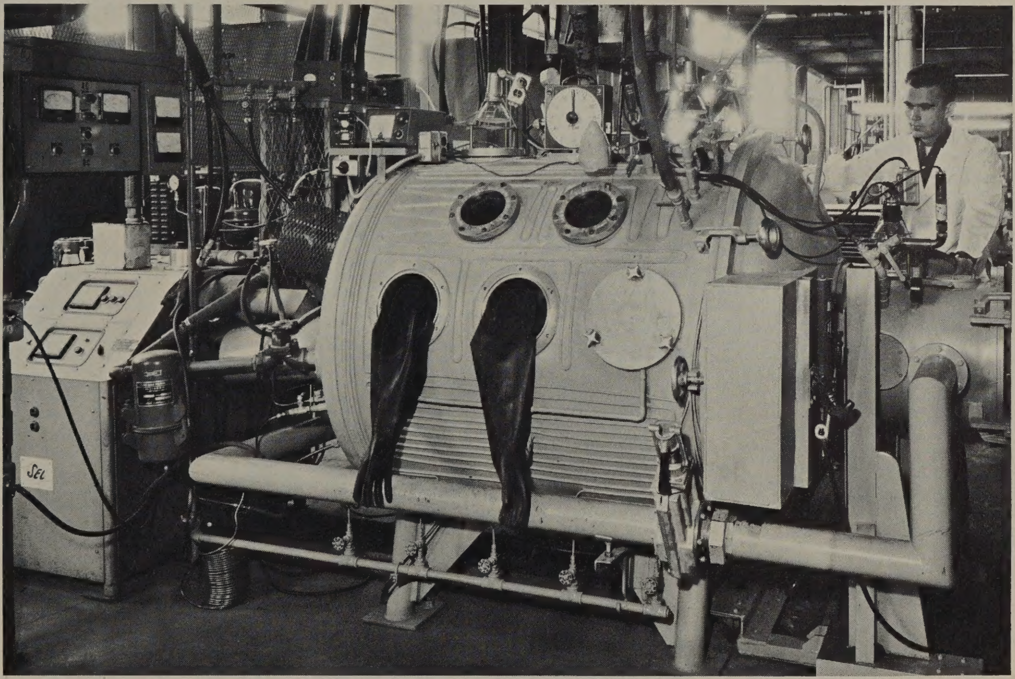
The mineral base in Nevada is continually broadening. Nonmetals, led by sand, gravel, and stone for building and road construction, are increasingly important because of the proliferation of housing, needed for tourists and for workers in the Federal Government's many defense and research establishments.

Since 1954 a small but profitable oil industry in Nye County has developed as the State's first successful effort to meet part of its own mineral fuel requirements. Another promising mineral, about to be developed, is the hot water found in many places far beneath the surface of the land. This water, once a menace to mining, has been declared a potential source of both geothermal power and of valuable minerals in solution.

From 25 to 30 or more mineral commodities are obtained from Nevada deposits—the number and kind varying from year to year according to world or national markets for minerals that



Gypsum plants like this one at left contribute to Nevada's sizable mineral output. Scientists use this machine (below) at the Reno Metallurgy Research Center to develop new processing and mining techniques that will sustain the State's ever-increasing mineral yields in the years to come.

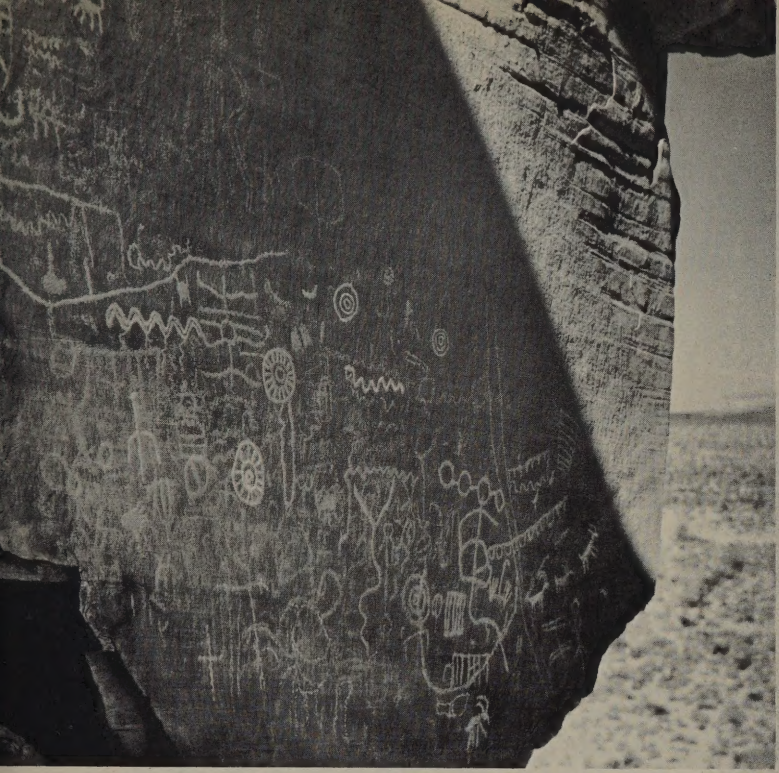


cannot be consumed within the State. Each of Nevada's 17 counties normally yields 3 or more mineral commodities in commercially significant quantities. White Pine, on the Utah border, and Lyon, in the western mountains, are the two greatest copper-producing counties. With a combined mineral output averaging more than $50 million annually, they also produce six to nine other minerals ranging from precious metals and gem stones to molybdenum, clay, and diatomite.

Nevada is also a source of such metals as mercury, manganese, tungsten, uranium, and iron ore. She supplies such important non-metals as gypsum, barite, lime, talc, and soapstone. Even the rare mineral, dumortierite. used in making spark plugs, is mined in Nevada. One of the Nation's largest tungsten-ore mines, now inactive, is in Pershing County, and northern Humboldt County supplied one of the largest black opals ever found—the Roebling opal, now on display in the Smithsonian Institution in Washington, D.C.

The mineral industries of Nevada have been depressed more than once since the early days, but always there have been new discoveries and constantly improving methods of mining and processing minerals to help keep her among the Nation's important mineral-producing States.

Indians and Their Resources



(Above) Petroglyphs, carved by Indians thousands of years ago, have been found in Clark County. The rock carvings describe the life of a vanished culture.

(Left) On ceremonial occasions, Indians at Pyramid Lake Reservation don the feathered headdresses and beaded buckskins that are traditional as festival clothing.

(Right) Today, young Indians receive vocational training at the Federal Government's Stewart Indian School.

Nevada's numerous caves produce ample evidence that the region was inhabited as long as 10,000 years ago, from man in the prehistoric period, through the Basketmaker and other early Pueblo cultures, to the early ancestors of the modern Paiute Indians.

Later, trappers who moved into the northern regions of Nevada encountered the Plateau Shoshone, including the Paviotso or Northern Paiute and a lesser number of Bannock; the Southern Paiute; and the Washoe, who lived around Lake Tahoe in Nevada and California.

Tribal organization among some Nevada tribes followed the structure of subdivision into small groups or bands. Among the Paviotso (Northern Paiute) the bands varied from 5 to 10 families, with a few bands numbering more than 100 people. For winter hunting, the bands would gather into one or more semi-permanent settlements, dispersing in the spring into small family groups who scattered on their continuous hunts for food throughout the particular land areas controlled loosely by them. Most of the tribes did not maintain rigid control over any area, but some Indians of western Nevada did claim specific rights over certain groves of pine nut trees, the fruit of which formed a substantial and important element in their diet.

For the most part, the Indians of Nevada lived in extreme poverty even before their initial contacts with white settlers, and early visitors of the region reported that the Indians were too weak to make their way into lands where game and foodstuffs were more abundant. These Indians made themselves troublesome to travelers and early settlers by their thefts of oxen and cattle, but their thievery was motivated by hunger rather than the fun of harassing the unwanted white men.

On the whole Nevada's Indians were friendly to early explorers and trappers until around 1840 when the great stream of emigration began. From that point on, only the Paiute in the more remote valleys remained little affected by the ingress of white men and in time, even they were acutely affected.

The discovery of the Comstock lode at Virginia City brought on a great crisis in the affairs of Indians throughout Nevada, for in the following 10 years prospectors penetrated every part of the Territory. Even more menacing to the Indians was the introduction of livestock to the country, and the subsequent destruction of native food plants.

Pinyon trees were cut down for fuel, depriving Indians of their pine nut supplies. Wild game of every species was wantonly slaughtered, further reducing the Indians' source of food. By this time, the Indians had both guns and horses and were able to inflict considerable damage in retaliation, and by 1860 they had engaged the settlers in numerous clashes, resulting in the establishment of several military posts for the protection of the settlers.

Troops quartered at Fort Churchill and Fort Ruby were kept busy suppressing or dispersing raids on stage coaches and stations throughout the Civil War years. Indians of Nevada, like those in numerous other States, spent these years trying to drive out the white invaders of their lands while the white man was busy with the larger problem of War between the States.

With the completion of the first transcontinental railroad in 1869, the native period in Nevada virtually reached an end. In October 1863, the Federal Government had extended its authority, without formal purchase, over the territory of the "Western Shoshoni" and included within it the northern part of the land occupied by the northern Paiute. The Government assigned these Indians to reservations and created a mill and timber reserve on the Truckee River for the Pyramid Lake Indians in 1864.

Two additional reservations were created for the Paiute in 1875, one at Walker River and the other at Pyramid Lake. "The rest of the Pai Ute country," reported historian C. C. Royce, "was taken possession of by the United States without formal relinquishment."

Although the Shoshone and Paiute groups gave up all but their reservation lands without realizing what was happening to them, the Washoe Indians fared considerably worse. They had the misfortune to lose a series of skirmishes with their Northern Paiute neighbors, between 1860 and 1862, over possession of the site of Carson, and ended with no land they could claim as their own. Poverty and landlessness made them depend almost entirely upon the towns and ranches between Reno and Carson City where they worked as laborers or existed on handouts when there were no jobs. The Government at one time proposed to set aside two reservations for the Washoe in Carson and Washoe Valleys, but the plan was abandoned because white settlers already occupied the Territory. Few in number today, the Washoe still live in two small colonies near Carson and Reno with some of their former enemies and conquerors, the Paiute.

The present Indian population of Nevada is approximately 3,700. These Shoshone, Paiute, and Washoe Indians occupy 10 small colonies, 15 reservations (of which 4 are partially located in other States), and a number of scattered individual allotments.

Indian Lands Vary in Size

Indian lands in Nevada comprise about 1.6 percent of the total area of the State. The largest reservation, Pyramid Lake, contains 475,085 acres, a large part of which consists of Pyramid Lake itself. Next in size is the Walker River Reservation, with 310,757 acres

At educational facilities such as this, the Federal Government provides opportunities for Indians to learn job skills.

of tribal land and about 8,790 acres of individually owned lands. Other principal reservations are Duck Valley (144,274 acres in Nevada and the remaining acreage in Idaho); Goshute (71,554 acres in Nevada and additional acreage in Utah); Fort McDermitt (16,236 acres in Nevada and a larger, but unoccupied acreage in Oregon); and South Fork (13,050 acres). The remaining Indian land in Nevada, amounting to approximately 101,917 acres, consists of small reservations, colonies, individual allotments, and 5,582 acres of the 32,801-acre Fort Mohave Reservation whose major, and occupied, area lies in Arizona and California.

There is virtually no mineral activity on Indian lands in the State. However, a few small sand and gravel permits have been let, and an exclusive mineral prospecting permit with option to lease is in effect on the Walker River Reservation.

The only significant timber resources on Indian lands in Nevada are on the Pyramid Lake Reservation. Although other Indian lands within the State support forest growth, most of it is classified as noncommercial timber. Of approximately 104,994 acres of Indian forest lands supporting an estimated 195,930,000 board feet of timber, only 33,674 acres, containing an estimated 16,440,000 board feet, are of commercial value.

The water resources associated with Indian lands comprise one of the most valuable Indian assets, and in Nevada, 18 Indian irrigation projects or systems are in operation to utilize this asset, serving everything from 6,400-acre farms to small garden tracts of just a few acres.

Range Usage

Nevada Indians own a total of 877,664 acres of tribal, and 64,425 acres of individually allotted, grazing lands, primarily on the Duck Valley, Fort McDermitt, Goshute, Pyramid Lake, Summit Lake, and Walker River Reservations, and on the Washoe Allotments. The range will support 17,382 cattle for an average 5-month season; in addition, 300 deer graze on the range. Use varies from yearlong to seasonal, depending upon location of the land, most of which is open grassland, sagebrush type. Livestock owned by Indians currently uses about 75 percent of the range land.

Indian farmers and the Bureau of Indian Affairs invest a combined total of about $425,000 a year on soil and moisture conservation work on Indian lands in Nevada. In a recent year, brush was removed from 3,560 acres, 35 miles of fencing was built, 3,260 acres were seeded to grass, 1,360 acres of land were leveled, and 7 stock ponds were built to improve Indian lands.

Recreation Attractions

Famous during the latter part of the 19th century, sports fishing in Pyramid Lake (situated on the Pyramid Lake Reservation) was almost ended at one time because of the white man's diversion of propagating water needed for fish reproduction. Today it is being revived and rehabilitated, and gives good promise of becoming an excellent tourist attraction on the reservation. Pleasure boating is also a popular activity on the lake.

Wildhorse Reservoir, in northern Elko County, is another important recreation area in Nevada. Part of the Duck Valley Indian Irrigation Project, Wildhorse provides excellent fishing, and the Nevada Fish and Game Department has a 10-year, free-use permit on two sites of the lakeshore for recreational development. These sites and their improvement facilities are open for public use.

Outdoorsmen, whether roughing it on a wilderness trail or family camping in parks and forests, find opportunities in Nevada's great open space to suit all recreation tastes.

Outdoor Recreation

Recreationists come in growing numbers to the scenic and historic areas of Nevada. The State is a traffic bridge between the east and California and has more than 15.5 million visitors a year. Their exodus to the land and water takes on many forms—camping, hunting, fishing, rock hunting, horseback riding, hiking, boating, swimming, or pure esthetic enjoyment and relaxation.

Tourists travel to Nevada each year to vacation at Lake Tahoe, the "skyhigh" lake which straddles the Nevada-California line in the rugged Sierras; to visit the seven national forests, two national monuments, and Lake Mead Recreation Area; to see numerous ghost towns; to fish in the lakes or cool mountain streams of the State; to see spectacular Hoover Dam; and to ski at several mountain resorts. Hunting is particularly popular on Nevada's public lands.

Visitors looking for the Old West can find it in Virginia City—the "World's Liveliest Ghost Town." Over a century after its tumultuous beginning, Virginia City still roars and can be seen as it actually was, with almost no restoration necessary. During summer months 40,000 people visit it every week. Other early boom towns in Nevada include Silver City and Gold Hill.

Nevada has several State parks offering some exceptional scenic attractions and geological formations and numerous roadside parks and rests. What Nevada holds for the vacationist can be summed up as "Recreation Unlimited."

Federal Areas

The Department of the Interior's National Park Service administers the following areas in Nevada: Lehman Caves, Death Valley (California-Nevada), and Lake Mead (Arizona-Nevada).

Beautiful stalactites, grotesquely colored formations, and fossil remains make Lehman Caves National Monument in Nevada one of the most interesting attractions in western America. The monument, located west of Baker near the Nevada-Utah boundary, can be reached from

Information tables listing major Federal, State, and local recreation areas in Nevada and a location map appear at the end of this chapter. The acreage, type of visitor use, and outdoor activities available at the various parks, forests, and recreation sites can be found by reading across the table.

One of Nevada's prime attractions, Lehman Caves National Monument amazes visitors with its beautiful formations.

U.S. 7 and 50 to the north or U.S. 93 to the west. Over 27,000 visitors saw the monument in a recent year.

Gypsum Cave is of particular interest because of the numerous fossils, among them the remains of a giant sloth, that have been found there. Besides viewing the unusual interior of the Caves, visitors may picnic on the monument grounds, fish for trout at Baker and Lehman Creeks bordering the area, and view the impressive surrounding mountain scenery. The monument is on the eastern flank of majestic Wheeler Peak, at an average elevation of 7,000 feet, with views of the Snake Valley backed by range after range of mountains. Camping facilities are located in adjacent Humboldt National Forest.

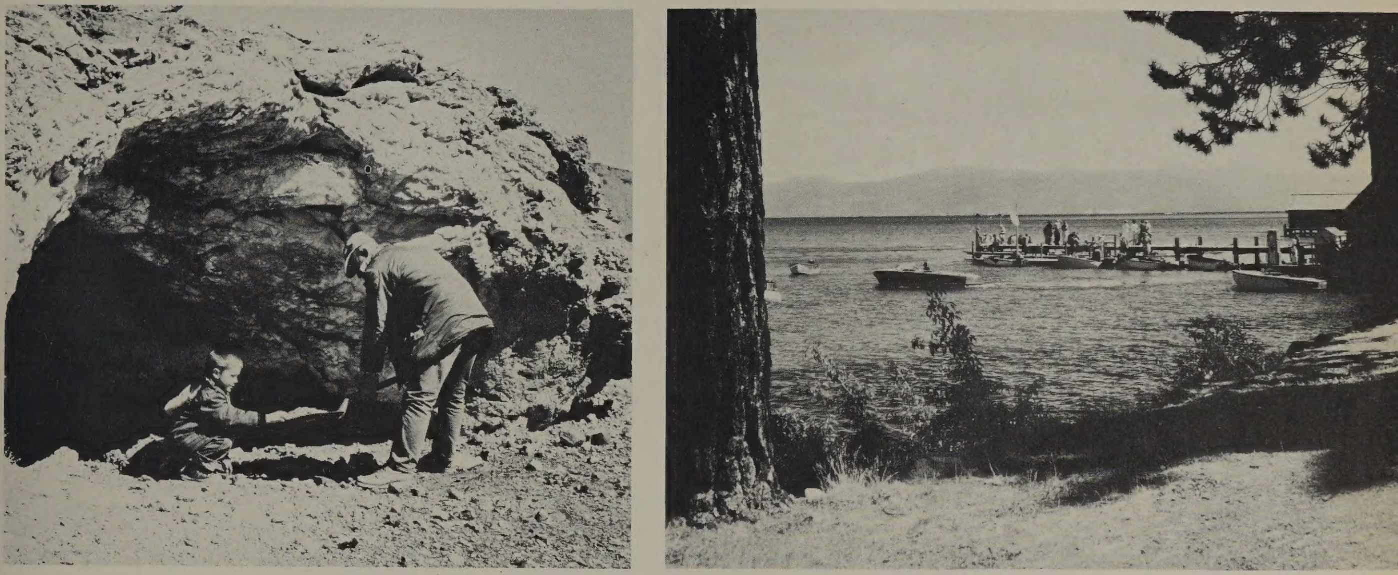
Death Valley National Monument, encompassing 1,766,466 acres in eastern California, and 115,240 acres in southwestern Nevada, is an unspoiled landscape rich in esthetic appeal and scientific interest, and includes the lowest point in the Western Hemisphere—282 feet below sea level near Badwater. The highest temperature recorded in the valley is 137° in the shade. Death Valley is famous in the history of the West through the annals of the explorers, prospectors, and emigrants who crossed it into California.

Lake Mead Recreation Area, encompassing Lake Mead, formed by Hoover Dam, and Lake Mohave, formed by Davis Dam, includes 689,287 acres in Nevada and 1,209,901 acres in Arizona. One of the largest manmade lakes in the world, Lake Mead, boasts 550 miles of shoreline and offers a wide variety of sports and recreation opportunity. More than 3 million visitors from all over the Nation used its facilities in a recent year, making the area one of the most popular in the national park system.

Recreation opportunities include a variety of water sports, camping, and sightseeing at Hoover Dam. Visitors to Hoover Dam descend on elevators 528 feet into the 726-foot-high concrete dam on the Colorado River. Guides conduct over one-half million people through the dam and power plant every year.

National Forest Recreation

Recreation use of national forests in Nevada provides an indicator of the mounting tide of people finding this State an outdoor paradise.



Rockhunting on land and boating on such waters as Lake Tahoe are increasingly popular forms of recreation in Nevada.

While the State's population rose 79 percent in the last decade, the use of the forests by visitors increased by 400 percent; and these lands make up only one-fourteenth of the State's area.

National forests offer 5,057,987 acres of grass and sagebrush, pinyon-juniper, mountain mahogany, aspen, pines, spruce, and fir; of valleys and canyons; and mountain lakes that contrast with dry desert sinks below and beyond the forests.

Through the forested lands of the national forests, 101,000 big-game animals roam—99,000 of them mule deer. There are also antelope, elk, mountain goat, bighorn sheep and bear, and many smaller animals such as sage hen, grouse, and rabbits. Hunters bag about 14,000 deer yearly in the national forests.

The national forests in Nevada, administered by the Department of Agriculture's Forest Service, are listed below with their headquarters and major recreation attractions.

Humboldt, with headquarters at Elko, is an area in the north-central and mideastern portions of the State transversed by the Santa Rosa, East Humboldt, Snake, Schell Creek, and Grant Ranges, and by the Independence, Ruby, and White Pine Mountains. Within the forest is the Jarbidge Wild Area—a hard-to-reach country with eight peaks over 10,000 feet; the Wheeler Scenic Area; the Owyhee River Canyon; and historic mining areas, both active and deserted. There is deer hunting and fishing in streams, mountain lakes, and at Wildhorse Reservoir. Skiers take to the slopes of the Ward Mountain Winter Sports Area.

Toiyabe (an Indian word meaning "black mountains") is in the central, southern, and midwestern portions of the State with headquarters at Reno. The western part of the forest is on the east slope of the Sierra Nevada; the central part is crossed by the Shoshone Mountains and the Toiyabe, Toquima, and Monitor Ranges. Attractions include the Nevada Beach Forest Camp at Lake Tahoe, historic ghost towns, wilderness, saddle and pack trips, big-game hunting, and fishing. Among the scenic drives are tours of Lake Tahoe, Mount Rose, Ebbetts, and Sonora Passes. Winter sports areas are at Kyle Canyon, Lee Canyon, and Reno Ski Bowl.

Inyo has headquarters in Bishop, Calif. Within the part of the forest jutting into Nevada is the State's highest mountain—13,145-foot Boundary Peak.

Eldorado has 400 acres in Nevada. Its headquarters are in Placerville, Calif. Lying above the valley floor at 7,000 to 8,500 feet elevation, this area affords a breathtaking view of Lake Tahoe. Hiking is popular in this forest.

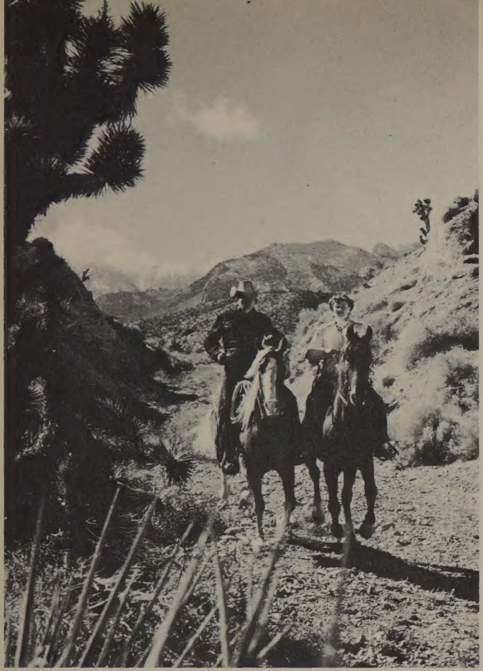
Other Recreation Facilities

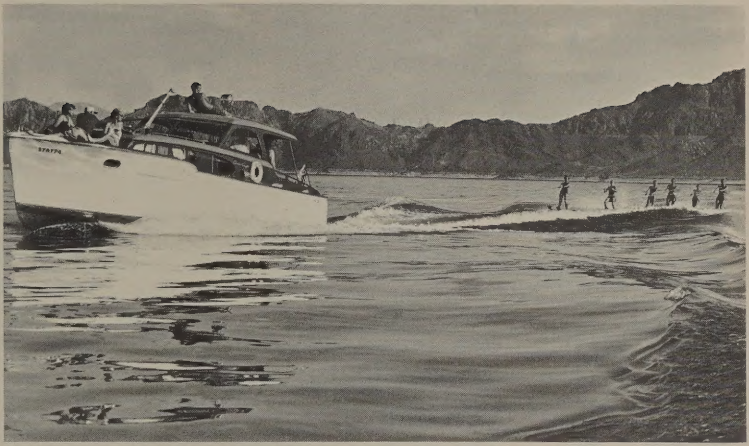
Several of Nevada's reservoirs are areas of present and potential recreation development, gaining increased attention as popular spots for camping, water sports, and picnicking. Thouands visit the Bureau of Reclamation's Lahontan Reservoir, and Rye Patch Reservoir on the Humboldt project each year.

Lahontan Reservoir, about 50 miles southeast of Reno on U.S. 50, is the only Nevada desert lake that boasts tree-shaded camping areas at almost every spot on the 75-mile shoreline. It has fresh water, constantly replenished with melting snows from the mountains. The lake is fast becoming a popular spot for campers, boaters, water skiers, picnickers, and swimmers. Recreation activities include sightseeing, picnicking, camping, swimming, water skiing, boating, fishing, hunting, and artifacts hunting. About 22,000 fish were caught, and 200 ducks and about 150 geese were taken in a recent year.

Beautiful Lake Tahoe, 35 miles from Reno on U.S. 50, offers refreshing water and a spectacular shoreline to visitors. State efforts have been accelerated to preserve the recreational value of its shoreline and to combat pollution. The lake area is a summer and winter fun center, offering skiing, horseback riding, picknicking, and water sports.

Walker Lake, about 100 miles southeast from Reno on U.S. 95, is a striking example of recreational development that has transformed a barren rock and sand shoreline into a shaded beach with campsite, picnic, and boating facilities. With its new facilities and its own primeval beauty, Walker Lake now is a haven for water sport





(Top left) Many dude ranches in Nevada provide horses for riders interested in the famous desert scenery.

(Top right) Huge Lake Mead Recreation Area is a mecca for water sports enthusiasts from all over the Nation.

(Left) A clear mountain lake means sport fishing for some, scenic beauty for others, and enjoyment for all.

(Right) Skiiers take to the slopes at Reno Ski Bowl, one of several winter sports areas in the State.

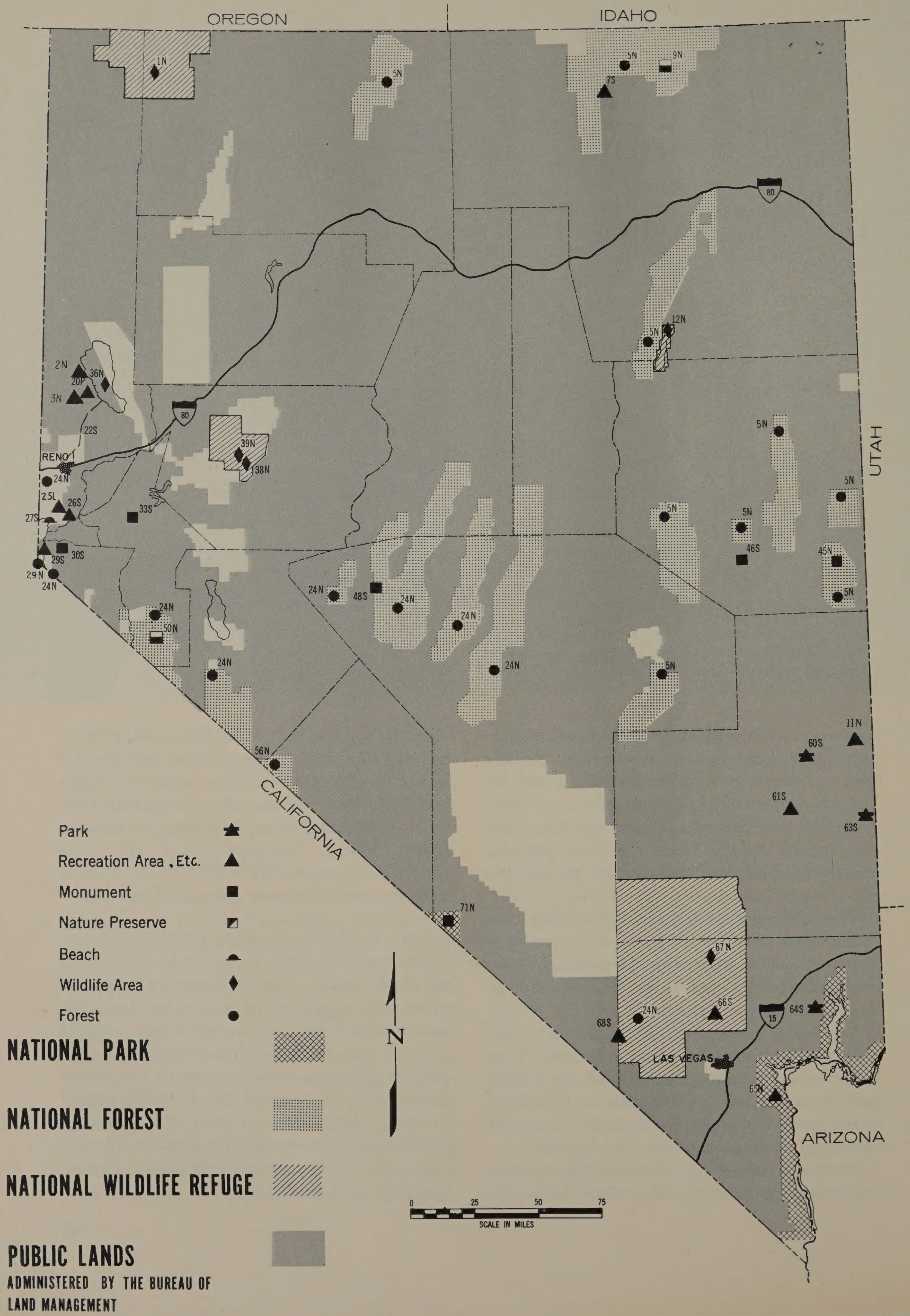
activity, answering the demands of many hundreds of recreationists each summer. The site was developed by the Department of the Interior's Bureau of Land Management with the cooperation of county and State agencies. The Accelerated Public Works Program provided the funds to employ local workers for the construction of facilities.

Five of the eight national wildlife refuges and game ranges administered by the Bureau of Sport Fisheries and Wildlife of the Department of the Interior offer opportunities for fishing, hunting, and other outdoor activities.

Two Indian reservations offer recreation attraction for fishing and boating. Pyramid Lake Reservation is being rehabilitated for fishing and pleasure boating on the lake, while Wildhorse Reservoir provides excellent fishing and includes lakeshore recreation development.

Privately owned recreation facilities are of major importance in Nevada. These vary from resident summer camps for boys and girls to fine hunting areas. Many farms and ranches accept vacationists. Others lease or supply hunting opportunities, often in combination with cabin facilities. Camping, picnicking, fishing, hiking, horseback riding, and guide services are provided by some. Many lease or sell scenic sites for home and camp lots.

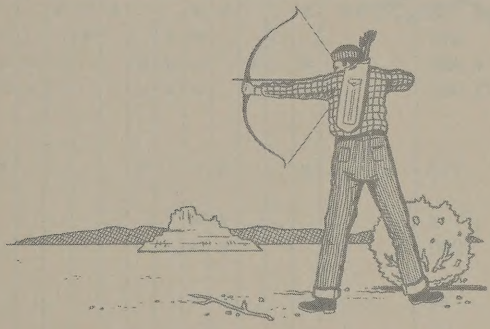
Lists of all the privately operated recreation opportunities in Nevada are not available from any single source. Travel bureaus and agencies, commercial organizations such as gasoline companies, motel and hotel associations, airlines and railroads, local chambers of commerce, and outdoor clubs and organizations all can supply information on many of the privately owned facilities. Local inquiry will reveal others. Some information is available from the Nevada Department of Economic Development, Capitol Building, Carson City, Nev.


OREGON
IDAHO
UTAH
ARIZONA
CALIFORNIA
RENO
LAS VEGAS
80
15
1N
5N
9N
7S
12N
2N
36N
20P
3N
22S
39N
38N
24N
25L
26S
27S
33S
29S
30S
29N
50N
48S
56N
46S
45N
11N
60S
61S
63S
71N
67N
66S
68S
64S
65N
Park ★
Recreation Area, Etc. ▲
Monument ■
Nature Preserve ◩
Beach ◓
Wildlife Area ♦
Forest ●
NATIONAL PARK
NATIONAL FOREST
NATIONAL WILDLIFE REFUGE
PUBLIC LANDS
ADMINISTERED BY THE BUREAU OF LAND MANAGEMENT
N
0
25
50
75
SCALE IN MILES

Nevada Outdoor Recreation Guide

How To Use This Guide

Information on major areas offering recreation in Nevada is given in the listings on the following pages. Each area can be located on the map at left by matching its number (as 65 N) with the corresponding number on the map. Symbols on the map represent types of areas. Letters after the numbers refer to Federal (N), State (S), local (L), and quasi-public and private (P). Only major interstate highways and major cities are shown on the map. A road map will provide exact routes to those areas you may wish to visit.



		Acreage		Type of use				Activities									
	Number on map	Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
FEDERAL																	
Recreation area: Lake Mead National Recreation Area (Nevada portion)	65N	689, 287	163, 000	x	x	x	x	x	x	x	x	x	x	x	x	..	..
Monuments: Scientific:																	
Lehman Caves National Monument	45N	640	....	x	..	x	x	x	x	..	..	..	..	..	..	..	..
Death Valley National Monument (Nevada portion)	71N	115, 240	....	x	..	x	x	..	..	..	..	..	..	..	..	..	..
Forests:																	
Humboldt National Forest	5N	2, 507, 870	....	x	x	x	x	x	x	x	..	..	..	..	..	..	..
Toiyabe National Forest	24N	2, 489, 181	....	x	x	x	x	x	x	x	..	..	..	..	..	..	..
Inyo National Forest ((Nevada portion)	56N	60, 576	....	x	..	..	..	x	x	x	..	..	x	x	..	..	..
Eldorado National Forest (Nevada portion)	29N	400	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wilderness:																	
Jarbidge Wild Area	9N	64, 827	....	..	..	x	..	x	x	x	x	x	x	x	..	..	x
Toiyabe Natural Area	50N	2, 236	....	..	..	..	..	..	..	..	..	..	x	x	..	..	x
Wildlife areas:																	
Charles Sheldon Antelope Range and Refuge (Nevada portion)	1N	578, 029	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..
Ruby Lake National Wildlife Refuge	12N	35, 698	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..
Anaho Island National Wildlife Refuge	36N	248	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Stillwater National Wildlife Refuge	38N	24, 203	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..
Fallon National Wildlife Refuge	39N	17, 902	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Desert Game Range National Wildlife Refuge	67N	2, 188, 743	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..
Winnemucca National Wildlife Refuge	36N	9, 806	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..

See footnotes at end of table.

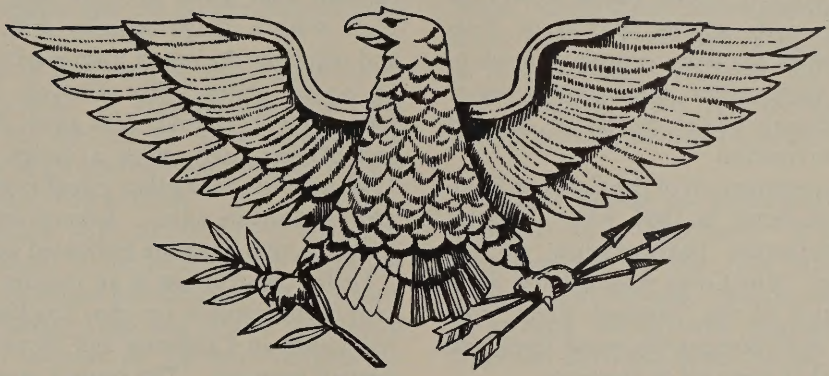
	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE																	
Parks:																	
Cathedral Gorge State Park	60S	1, 579		x			x	x	x	x					x		
Beaver Dam State Park	63S	119	20	x				x	x	x			x		x		
Valley of Fire State Park	64S	6, 560	163, 000	x			x	x	x	x					x		
Recreation areas:																	
Wildhorse Reservoir	7S	5	M	x	x			x		x	x	x	x	x			
Washoe Lake	26S	2	M	x			x				x	x	x				
Lake Tahoe (Cave Rock Wayside)	29S	2	120, 000	x			x	x			x	x	x				
Kershaw-Ryan State Recreation Area	61S	240						x	x			x					
Hidden Forest (BLM)	66S	4, 480		x		x		x	x	x				x	x		
Sterling Mountain (BLM)	68S	73, 000		x		x		x	x	x				x	x		x
Monuments:																	
Scientific: Ichthyosaur Scientific State Monument	48S	515		x			x	x		x					x		
Historic:																	
Mormon Station Historic State Monument	30S	2					x	x									
Fort Churchill Historic State Monument	33S	200					x	x		x							
Ward Charcoal Ovens Historic State Monument	46S	40		x			x	x									
Beach: Sand Harbor Beach State Recreation Area (Lake Tahoe)	27S	9	120, 000	x			x	x				x					
MAJOR LOCAL																	
Recreation area: Bowers Mansion	25L	46		x			x	x				x					
Scenic road: State 33	22S	30 mi.		x			x										
MAJOR QUASI-PUBLIC AND PRIVATE																	
Recreation area: Pyramid Lake	20P	500+	L	x	x	x		x		x	x	x	x				
FEDERAL—PUBLIC LANDS(2)																	
Tamarack Pt.	2N	40		x		x	x	x	x	x		x	x		x		
Sportsman's Beach	3N	30				x	x	x	x		x	x	x		x		
Meadow Valley	11N	20		x						x	x		x	x	x		

Footnotes:

(1) Where water surface acreage is not shown: "M" indicates water area under 10,000 acres, "L" indicates water area over 10,000 acres; where land or water acreage is not listed, it has not been determined.

(2) Recreation areas on lands administered by the Department of the Interior's Bureau of Land Management.

Programs of Federal Natural Resource Agencies



The natural resource functions of the Federal agencies represented in this booklet are extensive and detailed and are only briefly described. Additional information can be obtained by contacting the offices noted in the following programs section.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers, in addition to discharging its military-construction responsibilities, is engaged in a long-range program of civil-works planning and construction to develop the water resources of stream basins in Nevada in accordance with specific directives from Congress. Studies for water resource development consider conservation, flood control, water supply, hydroelectric power, recreation, fish and wildlife, and navigation.

Civil-works construction of the Corps of Engineers in Nevada began in 1884, when Congress authorized navigation improvements on the Colorado River. The Corps widened and deepened the channel of the Colorado River, constructed small dams to raise the water level, and blasted rocks that menaced navigation.

Since that early work, the role of the Corps in Nevada has been expanded to include constructing flood-control projects and multiple-purpose projects, administering laws pertaining to protection and preservation of navigable waters, fighting floods and making emergency repairs, and conducting studies on all major streams of the State. Work is accomplished in close cooperation with other Federal agencies and with State and local authorities to provide improvements of the type desired by the areas most directly concerned.

The Corps is conducting a river-basin planning program in Nevada in the Colorado River basin, the Great Basin including the Lahontan Basin, and the Columbia River Basin.

Two flood-control projects have been completed in Nevada and one is under construction. Four projects for flood-control and related purposes have been authorized for construction by the Corps.

Mathews Canyon and Pine Canyon flood-control reservoirs are in Lincoln County, about 100 miles north of Hoover Dam. The reservoirs are interdependent units of a project for flood protection of lands and improvements along Clover Creek, Meadow Valley Wash, and the lower Muddy River in the Virgin River Basin, which is part of the Colorado River Basin.

Mathews Canyon Reservoir is formed by an earthfill dam about 800 feet long and 71 feet high, with a design capacity of 6,260 acre-feet and regulates the runoff from a tributary area of 34 square miles. Pine Canyon Reservoir is formed by an earthfill dam about 884 feet long and 92 feet high, with a design capacity of 7,840 acre-feet to regulate runoff from a tributary area of 45 square miles. Average annual benefits from the two units are estimated at $130,000.

Under construction is an interim channel improvement project on the Truckee River and tributaries in California and Nevada for flood-control purposes. The project provides for enlargement of the Truckee River channel for a distance of about 3,200 feet downstream from the existing control structure at Lake Tahoe. As a result of the improvement, the lake releases would be greater at high-water levels than under past conditions, thus alleviating damages to lakeshore property from high lake levels. The project provides partial protection for about 3,000 residents along the shore of Lake Tahoe and for about 7,500 acres of agricultural lands along the Truckee River. It is designed to fit into a basin plan for flood control and allied purposes, which include the Washoe Reclamation Project. Construction, largely completed, was begun in 1959.

Authorized but still awaiting construction are the Gleason Creek flood-control reservoir at Ely, the Humboldt River Project of three upstream reservoirs and channel and drainage improvements, three flood-control units along tributaries of the Las Vegas Wash, and the Martis Creek Reservoir.

Further projects may be added to the Corps' authorized program from time to time in response to area needs. Typically, such needs are brought to the attention of the Congress, which may direct the Corps to conduct appropriate engineering and economic investigations to find ways of meeting the problems. These findings are reviewed, submitted to State and Federal agencies, and finally, transmitted to Congress which may authorize the project for construction, or may incorporate it for authorization into a comprehensive basin plan. After authorization, the project will be designed and built in accordance with the authorizing act at a time and rate determined by the appropriation of funds by Congress and the cooperation of local interests.

The Corps of Engineers is also charged with the responsibility of formulating rules and regulations for the use of space allocated to flood control at all reservoirs constructed wholly or in part with Federal funds.

In cooperation with the Bureau of Reclamation, Department of the Interior, the Corps has developed regulations for operating flood-control storage at Hoover Dam and is also evaluating flood-control aspects of various Reclamation projects under consideration in Nevada.

The Corps undertakes immediate remedial measures in emergency flood-control work to protect threatened flood-control structures. This work entails bank protection, removal of snags and debris, and clearing of channels in navigable streams, flood fighting, rescue work, and repair.

Congress has directed the Corps to make investigations and reports on flood-control and related problems in various drainage areas in Nevada. These include the Carson River Basin, Las Vegas Wash and tributaries, Truckee River Basin, Virgin River and tributaries, and Walker River Basin. These studies are in progress, and as funds are made available, will be completed and submitted with recommendations to Congress for its decision as to future action.

Further details on authorized projects are available in a brochure, "Water-Resources Development by the U.S. Army Corps of Engineers in Nevada," which may be obtained by writing the Division Engineer, U.S. Army Engineer Division, South Pacific, 630 Sansome Street, Room 1216, San Francisco, Calif., 94100.

Forest Service

The Forest Service in the U.S. Department of Agriculture administers 5,058,987 acres of land in Nevada and cooperates with the Nevada State Forester in programs for the management and protection of State and private forest lands. It conducts research activities through field offices of the Intermountain Forest and Range Experiment Station, with headquarters in Ogden, Utah, to keep the forest lands at peak production.

National Forest Administration

There are four national forests either partly or entirely within Nevada. The two with the largest areas in the State are administered by the regional forester for the Forest Service Intermountain Region, with headquarters in Ogden; the other two are administered by the Forest Service regional forester for the California Region, with headquarters in San Francisco. Each forest has a supervisor and staff to aid the regional forester in its administration, and each is divided into ranger districts.

The national forests are managed for the sustained yield of their many resources—range, recreation, water, wildlife, and timber—and in such a way as to benefit the greatest number of people now and in the years to come.

The importance and diversity of such national forest resources as timber, forage, and wildlife have expanded so rapidly in recent years that

A Forest Service ranger, inspecting a Nevada national forest, takes a long-distance view from a high trail.

it has become necessary to intensify management and protection activities to avoid serious deterioration of these resources and facilities. Under the Development Program for the National Forests, the Forest Service has announced plans for developing and managing forest resources to meet demands anticipated by the year 1972; the program includes long-term planning up to the year 2000.

For Nevada these plans include the annual harvest of 5 million board feet of timber; construction of 200 camp and picnic areas; improvement of 46,000 acres of small and big game range, 80 miles of streams, and 345 acres of lakes; revegetation of 179,200 acres of range, and construction of 910 miles of fence and 315 water developments; stabilization of eroding soil on 8,000 acres and along 100 miles of gullies and roads; and construction of 604 miles of multiple-use roads and 136 miles of trail.

Forest Service men work with the State Forester of Nevada to promote protection and management of State and private forested lands. Cooperative programs include watershed protection, flood prevention, forest and range fire prevention and control, tree planting, pest control, and technical assistance in forest management.

During a typical year, aid was given for protection of 2,216,000 acres against fire, and 129 fires that burned 730 acres were suppressed. Under the cooperative program, 1,000 acres have been planted to trees for windbarrier protection. Woodland management assistance was given 80 landowners.

Forest Service research programs in Nevada center around water, which can be a much-sought-after ally or a destructive enemy.

In one research project, Forest Service range scientists, in cooperation with the University of Nevada, seek to reduce and prevent flood runoff and excessive erosion by revegetating steep terrain on the eastern slope of the Sierra Nevada. Previously these areas were severely depleted by indiscriminate or excessive timber cutting, wildfires, and overgrazing. As a result, floods have increased in violence and frequency, and it is estimated that damages in the Reno area alone now average more than $200,000 annually. Decreasing flood runoff may mean a longer flow of water in the drier parts of the year.

Also in cooperation with the university, Forest Service and Bureau of Land Management scientists have been studying the effects of grazing use and weather—especially drought and rainfall—on choice range forage plants in the Carson Desert region of western Nevada. The overall objective is to determine site requirements of these plants.

Scientists of the Forest Service and the Department of Agriculture's Agricultural Research Service have also collaborated on problems of seeding the dry sagebrush zone in Nevada and Utah.

Further information on national forests and the activities of the Forest Service in Nevada may be obtained from the Regional Forester, Forest Service Building, Ogden, Utah, 84400.

Fish and Wildlife Service

The Department of the Interior's Fish and Wildlife Service, comprised of the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries, conducts several programs for managing Nevada's fish and wildlife resources.

The Bureau of Sport Fisheries and Wildlife administers eight National Wildlife Refuges and game ranges within the State to preserve various species of big game and waterfowl. It provides fish to Nevada waters from the Hagerman National Fish Hatchery in Idaho, aiding the State with stocking programs. The Bureau also cooperates with state agencies and industry in predator and rodent control.

The Bureau of Sport Fisheries and Wildlife conducts studies of fish and wildlife resources in connection with water development projects of other agencies to determine the effects of the project on these resources and to develop measures to improve these resources where possible. Important projects under study include the Washoe Project, the Moapa Valley Pumping Project, and the Pacific Southwest Water Plan of the Bureau of Reclamation. Corps of Engineers projects under study include the Las Vegas Wash and Tributaries and the Lower Truckee River and Pyramid Lake.

The Bureau's fishery management services provide advice on how to manage waters on Federal and Indian lands to assure the best possible fishing. Often this work is done in cooperation with State agencies. Trout studies and stocking are being conducted on the Sheldon Antelope Range, Summit Lake Indian Reservation, and Walker River Reservation. A cooperative plan for the conservation and development of the fish and wildlife potential on the U.S. Naval Ammunition Depot at Hawthorne has combined the efforts of Bureau and State scientist and naval personnel.

Over the years, Nevada has used Federal aid funds, apportioned by the Bureau of Sport Fisheries and Wildlife from money raised by a Federal excise tax on certain hunting and fishing equipment, in its program for the restoration of fish and wildlife. Some of these funds are used in the foreign game introduction program, with the result that gray and black francolins, upland game birds from Asia, have a good chance of being successfully established. The State is continuing to use the Federal-aid money in providing watering devices to improve the present range of Gambel's quail and the chukar partridge and in developing waterfowl management areas to assure optimum use of the available water supply. A cooperative trout study with California is designed to improve fishing in Lake Tahoe. Other programs are aimed at developing warm-water fisheries in lakes too warm for trout.

The Bureau of Commercial Fisheries maintains a marketing office at Terminal Island, Calif., which services Nevada. With its responsibility for stimulating the use of domestically produced fishery products, the Bureau conducts consumer education activities in Nevada directed at developing new markets and expanding traditional markets for fishery products produced in all sections of the country.

Further information on Nevada's fish and wildlife and the activities of the Bureau of Sport Fisheries and Wildlife may be obtained from the Bureau's Regional Director, Federal Building, 1002 N.E. Holladay Street, Post Office Box 3737, Portland, Oreg., 97208.

Geological Survey engineers take topographic measurements that will help to eliminate some of the unmapped land area in Western States like Nevada.

Geological Survey

Scientists of the Geological Survey conduct a large number of geologic, geophysical, and geochemical studies in Nevada which contribute to knowledge of a wide range of mineral resources as well as to knowledge of the earth's composition, structure, and history.

Many detailed investigations relate directly to specific mineral resources in certain areas, such as the copper deposits in the Ely district; beryllium in the Quinn Canyon Range and Mount Wheeler mine area; borates in the Rhodes, Teel, Fish Lake, and Railroad Lake Basins; and quartzites in the eastern part of the State. Also part of these studies is a continuing program of research on geochemical and other modern field methods of prospecting for specific mineral commodities.

Geologic mapping projects are underway in the Eureka mining district, Shell Creek Range, Northern Sonoma Range, Cortez Mountains, southern Carson desert, Owyhee-Mountain City area, and Las Vegas area. In addition, geologic maps of several counties are compiled as part of a cooperative mapping program with the Nevada Bureau of Mines. A long-range research program, being conducted at the Nevada Test Site in cooperation with the U.S. Atomic Energy Commission, will provide data on the geology, geophysics, and hydrology needed by users of the test site and its environs.

Topographic Mapping

Prior to the establishment of the U.S. Geological Survey in 1879 for the purpose of mapping and geologic exploration in Western States and territories, maps of Nevada, other than those made by the Fremont expeditions, were nonexistent. Early topographic mapping by the Geological Survey was concentrated in the areas of mineral deposits where map needs were most urgent.

In recent years, through expanded Federal and Federal-State mapping programs, appreciable progress has been made in reducing the unmapped areas of Nevada. About 44,300 square miles of the State were covered by published maps of the 1:24,000 scale (1 inch equals 2,000 feet) and 1:62,500 scale (1 inch equals approximately 1 mile) series. Topographic mapping of about 12,500 square miles is currently in progress. Complete topographic map coverage is available for the State in the 1:250,000 scale map series (1 inch equals approximately 4 miles).

Water Investigations

The Geological Survey determines and describes the occurrence, availability, and quality of the water resources of Nevada. Investigations are planned to obtain information needed to solve water problems related to supply, areal distribution, quality, and floods. Much of the work is done in cooperation with State and other Federal agencies.

Streamflow records are collected by the Survey at 98 continuous gaging stations strategically located throughout the State. Chemical quality is measured at four monitoring sites, and water temperature is measured at five sites. Ground-water levels are recorded continuously or measured periodically at 401 wells, in addition to water levels measured at many other wells for special purposes in project studies.

Statewide reconnaissance studies on ground-water resources are continuing under a 10-year plan conducted in cooperation with the Nevada Department of Conservation and Natural Resources. Reports prepared under the program are now available for about 60 areas covering about one-third of the State. New studies are being started in Kings River Valley, Quinn River Valley, Eagle Valley, and Washoe Valley. At the present rate of progress, the remaining 70 basins of the State should be covered in the next 5 to 6 years.

Other special studies cover the hydrology of a part of the Humboldt River Valley and the Nevada Test Site, and flood characteristics of Nevada streams.

Mineral Classification Activities

The Branch of Mineral Classification is engaged in a geologic mapping and mineral land classification program involving minerals that are subject to lease by the Federal Government. Approximately 220 square miles are involved, of which about 25 square miles have been mapped, primarily to evaluate phosphate deposits. Other investigations include mapping potential sodium, potash, and coal lands. Routine activities in connection with leasing and classification work are maintained through an office in Los Angeles, Calif.

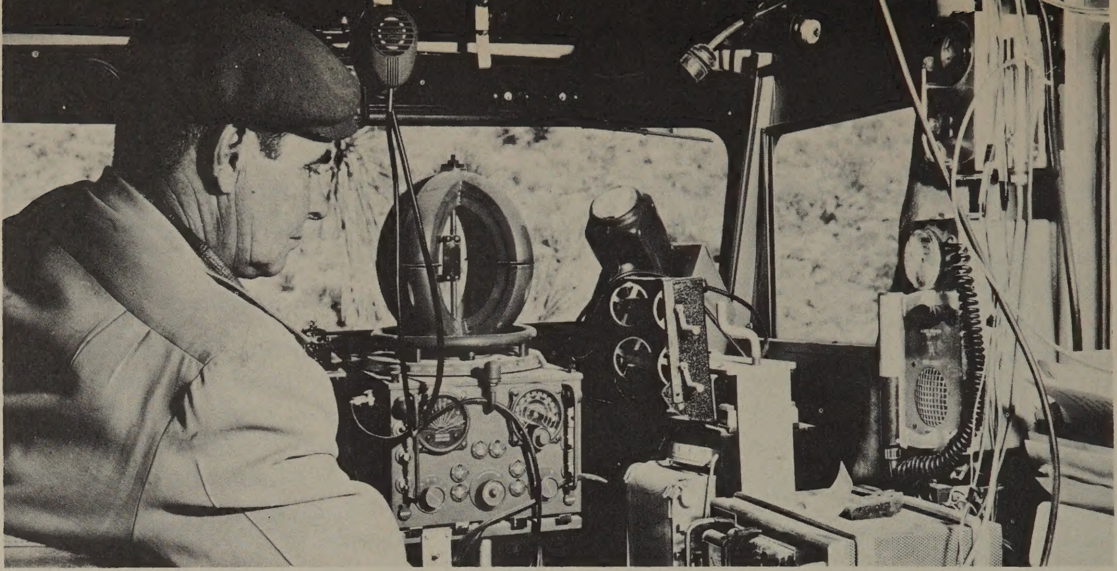
Information on the various geologic and topographic maps, mineral resources maps, water resources reports, and other geological survey publications relating to Nevada can be obtained by writing the Director, Geological Survey, Department of the Interior, Washington, D.C., 20240.

Bureau of Mines

Less than 10 years after it was created by Congress in 1910, the Bureau of Mines of the Department of the Interior had a major facility in the Silver State. The variety and extent of Nevada's past and existing mineral industries and its huge potential for development of additional mineral resources made the State a logical location for for many activities of the Bureau, which is charged with promoting wise development of the Nation's mineral resources.

What has since become the Bureau's Reno Metallurgy Research Center was established on the campus of the University of Nevada in 1920, in quarters provided by the Nevada State Legislature. Later, in 1936, a Bureau Metallurgy Research Laboratory was established at Boulder City, south of Las Vegas, to take advantage of the electricity that the just-completed generating plant at Hoover Dam could provide for electrometallurgical research and development.

The Bureau cooperates with Nevada's university, State Bureau of Mines, and industry on a variety of programs. Cooperative research in a number of the State's great open-pit copper mines, for example, has helped the Bureau of Mines develop facts about slope stability and ground stress that will long aid the economics and contribute to the safety of surface mining throughout the Nation. Studies of methods and costs of mining conducted at various types of Nevada mines have also been of great value to the mineral industry generally.



Modern electronic equipment is mounted in trucks to aid Bureau of Mines scientists in their search for uranium.

Engineers and inspectors from the Bureau of Mines Health and Safety Activity investigate almost all accidents involving fatalities or serious property damage occurring in mineral industry operations throughout Nevada. They have also taught thousands of workers and their supervisors the fundamentals of accident prevention and of first aid, and helped train mine-rescue teams and develop mine-rescue techniques. The Nevada and Federal Bureaus of Mines cooperate in collecting and compiling employment and injury statistics for the State's mineral industries.

Many experiments in developing electrochemical methods for purifying metals—called electrorefining—have been carried to successful conclusion at Boulder City. High-quality reactor-grade uranium, for example, was produced at Boulder City directly from Nevada ores for the Atomic Energy Commission. High-purity molybdenum carbide was similarly electrowon directly from molybdenite. A method originally developed by the Federal Bureau for refining titanium metal was adapted by scientists at Boulder City to refine impure hafnium and produce control-rod material needed for atomic reactors.

Other specialized Bureau research centers outside Nevada have aided the Silver State in countless ways. In a typical year samples of kaolinite from Esmeralda County and of bentonite from Mineral and Nye Counties were undergoing tests in the Bureau's San Francisco Petroleum Research Laboratory, to determine their suitability for use in oilwell drilling muds. Other samples were being evaluated and tested for different qualities in ceramic and other uses at the Bureau's Seattle Nonmetallics Laboratory.

Nevada field explorations by Bureau mining engineers have uncovered new mineral deposits and have developed information about other, known resources that has made their profitable recovery possible. Other explorations and reconnaissances yielding negative results have helped prevent a waste of money and effort in mining enterprises that would not have been successful.

Much of the analytical work performed by Bureau scientists at Reno has repercussions far away. The first large recovery of manganese nodules from the floor of the Pacific Ocean was evaluated at Reno. Individual nodules recovered from seabottoms throughout the globe had been recovered from time to time and analyzed. At Reno, however, the number and weight of the samples and the accuracy and consistency of the analyses made have permitted oceanographers to draw conclusions that have aided the development of sea minerals as a new national resource.

Further information on the mineral resources of Nevada and the activities of the Bureau of Mines may be obtained from the Reno Metallurgy Research Center, 1605 Evans Avenue, Reno, 89505.

Office of Minerals Exploration

Nevada mining interests have participated actively in the exploration assistance program for minerals which was introduced in 1951 under the Defense Minerals Exploration Administration and has continued since 1958 under the Office of Minerals Exploration of the Department of the Interior.

During the first 12 years of this program, exploration work valued at more than $3 million has been authorized on 67 projects in Nevada on which the Federal Government has invested $1.4 million.

Discoveries have been certified on 27 of these projects. The principal minerals sought have been antimony, copper, fluorspar, gold, lead, manganese, mercury, silver, tungsten, and uranium.

Further information on activities of the Office of Mineral Exploration in Nevada may be obtained from the Field Officer, OME, 113 Custom House, 355 Battery Street, San Francisco, Calif., 94111.

Bureau of Indian Affairs

In addition to resource conservation and development work on Indian lands, the Bureau of Indian Affairs of the Department of the Interior provides the Indian people with community services in education, welfare, employment assistance, and law enforcement.

Education

Fewer than half of Nevada's Indian children attend the one Bureau-operated school facility—a junior-senior high school—in Nevada. Most attend public schools, and under a contract with the State, the Bureau makes funds available to school districts enrolling Indian children from nontaxable lands.

Since 1960, a student plant-management program has been in effect for 10 to 14 boys remaining at the Bureau-operated Stewart School during the summer months. The program emphasizes work projects, but also offers some academic instruction and provides organized recreational activities.

The Bureau of Indian Affairs conducts adult education units in five Indian communities, offering courses in home management, community development, communication skills. health, art, and many other subjects.

The Paiute Tribe, the Bureau, and other sources offer scholarship aid for students wishing to attend colleges and vocational schools.

Welfare and Employment Services

The Bureau administers a welfare program for needy Indians who are not eligible to receive services from established public agencies, including the Social Security Administration. Child welfare services include arrangements for the protection and care of dependent or neglected children, and the securing of appropriate institutional care for handicapped children. The Bureau has a contract with the Nevada State Welfare Department for provision of foster care for Indian children.

The Bureau of Indian Affairs maintains an employment assistance staff at the Nevada Agency at Stewart to assist eligible Indian

Recreation development on Indian reservations such as Pyramid Lake broadens the Indians' economic opportunity.

applicants in establishing self-sufficiency through employment. In addition to direct relocation for employment, the program provides vocational training in institutions offering such courses and, in certain cases, on-the-job training in industrial or other facilities.

Law enforcement

The State of Nevada assumed jurisdiction over approximately one-third of the Indian country within the State. In the balance of the Indian country, major offenses are subject to Federal jurisdiction under the laws of the United States, and the great body of lesser crimes by Indians are tried in local Indian courts. The Bureau assists the tribes in their local law-enforcement programs.

Further information on activities of the Bureau of Indian Affairs in Nevada may be obtained from the Nevada Agency, Stewart, 89437.

Bureau of Land Management

In Nevada, the Bureau of Land Management of the Department of the Interior is responsible for the development, conservation, protection, and general management of approximately 47 million acres—some 60 percent of the State's total area.

The office of the State director for the Bureau of Land Management is in Reno. District headquarters are located in Elko, Winnemucca, Carson City, Ely, Las Vegas, and Battle Mountain. Records of all public lands in the State are maintained by the State office in Reno.

BLM is charged with managing and developing all the resources of the lands it administers. Among its special functions are cadastral survey and land classification.

Land Classification and Disposition

Land classification—the identification of the proper use of public land—is the basis for decisions on the sale, lease, and other disposition of public lands. Before the proper use or uses of a tract can be identified, the present and potential uses of that tract must be analyzed in the light of economic and other requirements.

Land disposition activities of BLM include sales at public auction of small tracts or larger isolated or rough and mountainous tracts leases and sales for public purposes under the Recreation and Public Purposes Act and grants under the agricultural land laws. In addition to handling cases involving the transfer of title to public land, BLM issues leases, permits, and rights-of-way authorizing other uses of these lands and their resources, including minerals.

BLM administers the mineral leasing and mining laws on public lands. Sand, gravel, and other mineral resources can be purchased from BLM, and community sand and gravel pits are often established on public land to meet local needs.

Management and Protection

BLM conducts soil and moisture, range improvement and range management programs for protection and rehabilitation of the range, for use by both livestock and wildlife. A variety of preventive and remedial methods is used to halt deterioration of land by wind, water, fire, insects, and misuse. Management of forage and water directly affects wildlife population numbers; BLM's program of balanced resource management helps in the perpetuation of the many species of fish and wildlife found on Nevada's public lands.

From the woodlands, many thousands of Christmas trees are annually offered for sale to the public in large quantities. BLM also issues thousands of Christmas tree permits which allow Nevada citizens to cut their own trees. BLM sells juniper posts by competitive sales and directly to local residents for ranch improvements, and issues permits for free use of juniper posts.

Fire represents the greatest threat to the resources of the public lands. BLM protects the public domain in Nevada through the efforts of its fire-control organization, which is supplemented by local residents, appointed annually, who aid in fire detection and suppression.

BLM fights fires with the most modern techniques and cooperates with the State and the Department of Agriculture's Forest Service in ground and aerial application of fire retardants.

Recreation

BLM's recreation program in Nevada is primarily designed to complement the recreational developments of other agencies—Federal, State, and local. When public land tracts can best be developed by other agencies, as indicated by a comprehensive development plan, these lands can be leased or sold. The Bureau is cataloging areas which, because of their recreation potential, should be preserved and properly developed by other agencies. This program is aimed at assuring the greatest yield of recreational values from the public lands.

A few recreation sites in Nevada have been

Range conservationists determine which sections of the public lands in Nevada will be used for grazing livestock.

developed in economically distressed areas by BLM under the Accelerated Public Works Program. The recreation development at Walker Lake is one of these sites.

Land Records

BLM maintains the official title and survey records for the public lands. They are among the most vital records of the State because they record the original transactions by which any private tract in the State passed out of Federal ownership. Records of the basic land surveys in Nevada are also maintained by BLM. These include the field notes of the surveyor and a map or diagram of the survey. Microfilm copies of these records may be purchased from the BLM State office in Reno.

Further information on BLM activities in Nevada may be obtained from the State Office, 560 Mill Street, Post Office Box 1551, Reno, 89505.

Bureau of Reclamation

Nevada is the scene of two Bureau of Reclamation "firsts" in the story of water resource development. The Newlands Project near Reno was authorized in 1903 as one of the original Reclamation developments under the Reclamation Act of 1902. Twenty-five years later, Hoover Dam, keystone of the Boulder Canyon Project and pioneer of mammoth Reclamation developments, was authorized as the first of the great multipurpose projects.

The Newlands Project, described earlier, includes several dams and reservoirs providing water storage for recreation and irrigation to the agricultural area of the project. Lake Tahoe Dam is 16 feet high and creates a reservoir of 732,000 acre-feet of water, contributing significantly to the welfare and economy of the project area.

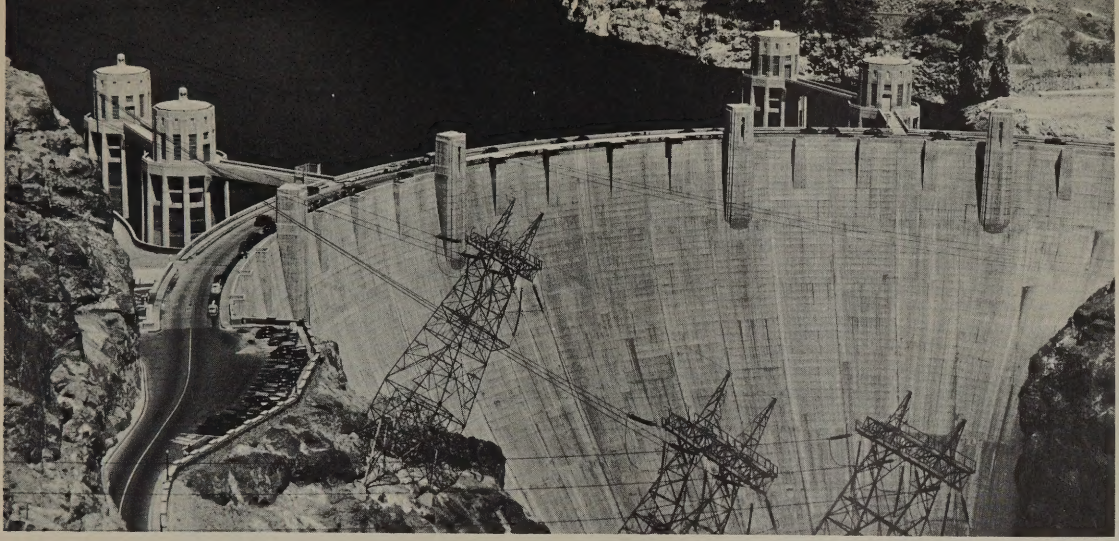
Lahontan Dam and Reservoir on the Carson River stores water diverted from the Truckee River, along with the natural flow of the Carson, for a total active capacity of 273,600 acre-feet. The dam is an earth and gravel-fill structure 162 feet high, creating a lake with a surface area of 10,000 acres. Boca Dam is an earthfill and rock-faced structure 116 feet high. Behind the dam, Boca Reservoir, with an active capacity of 40,900 acre-feet, stores water for Truckee River regulation and irrigation of lands on the Newlands and Truckee River Storage Projects. It also support substantial recreation use.

The Truckee Storage Project also is served by Boca Dam, Lake Tahoe Dam, and diversion dams, canals, and other water delivery structures built by the 33 ditch companies which operate the project.

Other storage features of the Newlands and Truckee River Storage Projects include Donner Lake, with a capacity of 11,000 acre-feet, Carson River Diversion Dam, a 23-foot-high structure diverting water into two main canals for irrigation, and Derby Diversion Dam which is 31 feet high, located 20 miles from Reno on the Truckee River, diverting water from the Truckee into Lahontan Reservoir through the 31-mile Truckee Canal.

Main Carson Division Canals extend 73 miles through the major part of the project with a combined capacity of 19,500 cubic feet of water per second of flow. The project also has 504 miles of laterals or smaller canals, and the drainage system comprises about 335 miles of deep, open-type drains constructed by the United States and the Truckee Carson Irrigation District.

The Lahontan Powerplant immediately below the Lahontan Dam has a generating capacity of 1,640 kilowatts and distributes electrical power



Pioneer of Reclamation's great multipurpose projects, Hoover Dam is still the highest dam in the Western Hemisphere.

to serve Fallon, Fernley, Wadsworth, Hazen, Stillwater, Indian reservations, and most of the rural sections of project.

Humboldt Project

The Humboldt Project includes Reclamation's Rye Patch Dam on the Humboldt River 25 miles upstream from Lovelock. The dam creates a 21-mile-long reservoir with a capacity of 179,000 acre-feet which stores water for release to project lands and provides recreational facilities. Battle Mountain water development, a major feature of the project, involved the purchase of 60,110 acres with appurtenant water rights of 54,990 acre-feet to increase the project water supply.

To transfer this purchased water to the project lands, Reclamation straightened 27 miles and widened 3 miles of river channel, constructed 9 miles of levees and 3 miles of swamp drainage channels, and removed 11 diversion dams. Additional work has been completed since the original construction, including rehabilitation of the original levees, construction of the Iron Point Relief Channel, additional channel clearance and straightening and the reconstruction of the Upper Slaven Dam.

Pitt-Taylor Reservoirs are two shallow offstream reservoirs developed in 1913 which now operate only in years when Rye Patch Reservoir is filled. They are located near the head of, and discharge into, Rye Patch.

Irrigation and distribution systems consist of six main canals and appurtenant works which have been included in the Humboldt Project plan of irrigating about 25,000 acres.

Washoe Project

The Washoe Project area, part of the Lahontan Basin, includes the Truckee and Carson Rivers. Most of the area is around Carson City, but a small portion extends into east-central California in the vicinity of Lake Tahoe. The project utilizes such features of other projects as dams and reservoirs, canals and laterals, drainage systems and powerplants. Authorized for construction on this project in Nevada are the Calvada and the Watasheamu Powerplants which will have combined installed capacities of 34,500 kilowatts and which will be adjoining dams of the same names.

The recently completed Prosser Creek Dam is the first such completed structure on the project; other authorized structures include four dams, a tunnel, a penstock, two canals, a lateral system and a drainage system.

Projects in Planning Stages

The Southern Nevada Water Supply Project and the Moapa Pumping Project are elements of the proposed Pacific Southwest Water Plan, a self-liquidating regional development program for the five States of the Lower Colorado River Basin.

Plans for the Southern Nevada Water Supply Project involve determining the most economical and feasible means of providing an adequate water supply to meet the present and future estimated requirements for the cities of Las Vegas, North Las Vegas, Henderson, and

Boulder City, the Nellis Air Force Base, and other defense installations in southern Nevada, and industrial development of Eldorado Valley. The necessary water supply would be pumped from Lake Mead and would be part of Nevada's allocated share of Colorado River water.

The total project plan would include a pumping plant on Lake Mead; a main aqueduct, including a 4-mile, 9-foot diameter tunnel; five smaller pumping plants and forebay reservoirs; a dam and regulating reservoir; and several miles of laterals. The Lake Mead intake structure, tunnel, dam and reservoir would be constructed initially to the size necessary to serve the ultimate capacity of the project. Other features would be constructed as required to provide for growth in the area.

The principal features of the contemplated development for the Moapa Valley Pumping Project include a pumping plant on Lake Mead and an aqueduct to provide Colorado River water to the Lower Moapa Valley in exchange for part of the present supply obtained from the Muddy River; and a diversion structure on the Muddy River, an off-channel dam and reservoir, a pumping plant, and an aqueduct in the Upper Moapa Valley and Meadow Valley Wash areas to supply irrigation water to the Lower Meadow Valley Wash area. Supplemental water could be served to approximately 3,300 acres of presently irrigated land and a full water supply would be furnished to about 6,000 acres. Municipal and industrial aspects of the project will be considered and the conservation of fish and wildlife will be studied. Start of feasibility investigations is contingent upon Nevada allotting a portion of its share of Colorado River water to this project. Also, a firm expression of support for the project by both State and local interests is required.

Further information on Reclamation projects in Nevada may be obtained from the Regional Office, Bureau of Reclamation, Post Office Box 427, Boulder City, 89005.

Bureau of Outdoor Recreation

Although the Department of the Interior's Bureau of Outdoor Recreation manages no lands, recreation areas, or facilities, its functions are important to residents and those who visit Nevada.

The Bureau provides a focal point for outdoor recreation programs and related activities in the Federal Government. It serves as a point of contact on recreation matters for regions, States, and their political subdivisions, organizations, and individuals. In turn, Nevada has named the Department of Conservation and Natural Resources, Carson City, as a center of contact to work with the Bureau in future State-Federal recreational planning and development.

Creation of a Bureau of Outdoor Recreation was one of several recommendations resulting from a 3-year study by the Outdoor Recreation Resources Review Commission of America's outdoor recreation resources, needs, and demands. The Bureau was established in the Department of the Interior in 1962, and a year later Congress enacted Public Law 88–29, a basic outdoor recreation law which "finds and declares it to be desirable that all American people . . . be assured adequate outdoor recreation resources, and that it is desirable for all levels of Government and private interests to take prompt and coordinated action to the extent practicable . . . to conserve, develop, and utilize such resources for the benefit and enjoyment of the American people."

The new law authorizes the following:

Preparation and maintenance of a continuing inventory of the outdoor recreation needs and resources of the United States;

It's a short drive from sunny swimming pools to ski slopes near Las Vegas. Variety keynotes recreation in Nevada.

Preparation of a system for classifying outdoor recreation resources;

Formation and maintenance of a nationwide outdoor recreation plan;

Provision of technical assistance to and cooperation with the States, their political subdivisions, and private interests;

Encouragement of interstate and regional cooperation in outdoor recreation planning, acquisition, and development;

Encouraging interdepartmental cooperation and promoting coordination of Federal plans and activities relating tooutdoor recreation; and

Acceptance and use of donations for outdoor recreation purposes.

Authority for these activities resides in the Secretary of the Interior and has been delegated by him to the Director of the Bureau of Outdoor Recreation. This authority provides means for stimulating increased Federal, regional, State, and local outdoor recreation activity. The program is particularly designed to strengthen States in their key role of providing for the future recreation needs of their citizens.

National Park Service

The Department of the Interior's National Park Service administers Lehman Caves National Monument, Death Valley, and Lake Mead, which have been described earlier in this book.

New facilities at Lehman Caves include a visitor center, a 25-unit picnic area, a public-access road, and cave trails. The new visitor center exhibits displays explaining the history and formation of the cavern. Also housed in the center are a small coffee and gift shop, and administrative offices.

With the cooperation of the Department of Agriculture's Forest Service, the National Park Service is working to preserve the scenic and scientific values of a representative segment of the Great Basin in Nevada as a national park. The proposed area is located in the southern part of the Snake Range in eastern Nevada. Great Basin National Park would encompass such natural wonders as Wheeler Peak, rising 7,000 feet above the desert floor; the Lehman Caves National Monument, and

National Park Service rangers give orientation talks before guiding visitors into Lehman Caves National Monument.

stands of rare bristlecone pines, said to be the oldest known living trees on earth—perhaps in excess of 4,000 years.

The Great Basin National Park proposal presents an excellent opportunity to display the story of the entire Great Basin. Primarily this story concerns the responses of plants and animals to their enviroment, which encompasses five life zones ranging from the desert upward to the crests of the mountains where life forms resemble those found in the far North.

Under a continuing long-range program of development of areas in the National Park System, the Service is moving along in its improvement plans for Nevada areas. For example: At Boulder Beach, Lake Mead Recreation Area, a visitor center is planned, and campground expansion and the building of fireplaces are continuing. New construction at Lake Mead includes a road extension and launching ramp at Hemenway Harbor, a ranger-information station at Cottonwood Cove, and a campground water supply system at Echo Bay.

Construction of North Shore Road from Las Vegas Wash to Echo Bay is planned for the Nevada section of Lake Mead National Recreation Area. Future roads and trails at Lake Mead will include road extensions and new launching ramps to low water at Boulder Beach, Echo Bay, Las Vegas Wash, and Overton Beach. Continuing Park Service work at Lake Mead also includes extension of water, sewer and power lines at Boulder Beach, Las Vegas Wash, and Echo Bay, as well as construction of a utility building at Cottonwood Cove.

By 1966, park visitors to the State of Nevada will find many projects completed for public use and enjoyment. There will be improved roads and trails, campgrounds, picnic tables, fireplaces, information centers, and visitor centers.

However, the real accomplishments of the Park Service's long-range programs are measured, not by acres of campgrounds, miles of new roads, scores of boat-launching ramps, or number of new public buildings. Across the land, the national parks represent America at its natural best. Each area contributes to a deeper understanding of the history of the Nation and of our way of life, of the natural resources which have given form to our land; and to the enrichment of the environment in which we live.

Further information on National Park Service facilities and activities in Nevada may be obtained from the Western Regional Office, National Park Service, 180 New Montgomery Street, San Francisco, Calif., 94105.

The Future

Nevada—the Silver State—is an area of natural grandeur with vast open spaces and tremendous recreation potential. Natural mineral wealth played an important role in the history of the State. Today rich resources of minerals, land, scenery, fish and wildlife contribute to its thriving economy.

Progress like Nevada's does not just happen. A great natural heritage in the hands of alert and resourceful citizens for over a century makes it happen.

The future of Nevada will be determined by what is done today to maintain and further develop its rich resource heritage. Conservation and wise use and development of the resources of land and water mean sound, continuing progress.

The natural resource agencies of the Federal Government have contributed importantly to Nevada's growth and progress, and their efforts, in cooperation with State and local agencies, will continue in years to come.

Bureau of Land Management
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(Right) Rivers such as the tumbling Truckee are precious resources which help assure the progress of Nevada.

Acknowledgments

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The "Natural Resources of Nevada" is one of a series of publications on various States. Similar booklets on the States of Montana, Washington, Colorado, Oregon (each 50 cents), Ohio, Arizona, Massachusetts, West Virginia (each 45 cents) are also for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

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(Back cover) Colorful yucca plants, stretching their spiny leaves to the sun, are common desert sights.

Bureau of Land Management
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THE GREAT SEAL OF THE STATE OF NEVADA

Created in 1849, the Department of the Interior—a Department of Conservation—is concerned with the management, conservation, and development of the Nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.

March 3, 1849